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FILE COVERS 1907 - 3 May 2004 VOL 140 ISS 19  
 FILE LAST UPDATED: 2 May 2004 (20040502/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> (d que 13)  
 L1 473667 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYSACCHARIDES+OLD,NT/CT  
 L2 171 SEA FILE=HCAPLUS ABB=ON PLU=ON OLIGOAMINE  
 L3 13 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND L2

=> (d que 118)  
 L1 473667 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYSACCHARIDES+OLD,NT/CT  
 L4 454 SEA FILE=HCAPLUS ABB=ON PLU=ON "CATIONS (L) POLYVALENT"/CT  
 L5 3604 SEA FILE=HCAPLUS ABB=ON PLU=ON "POLYELECTROLYTES (L) CATIONIC"/CT  
 L6 4025 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 OR L5  
 L17 7041 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND (12-L16 OR MACROMOL?)  
 L18 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L6

=> (d que 121)  
 L1 473667 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYSACCHARIDES+OLD,NT/CT  
 L17 7041 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND (12-L16 OR MACROMOL?)  
 L20 106 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND BIODEGRAD?  
 L21 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND POLYCAT?

=> (d que 137)  
 L7 STR

N~Ak~N~Ak~N~Ak~N  
 1 2 3 4 5 6 7

#### NODE ATTRIBUTES:

CONNECT IS E2 RC AT 2  
 CONNECT IS E2 RC AT 4  
 CONNECT IS E2 RC AT 6  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 7

## STEREO ATTRIBUTES: NONE

L8 245752 SEA FILE=REGISTRY ABB=ON PLU=ON N>3 AND C>3 AND NC=1 NOT  
(IDS/CI OR PMS/CI OR RSD/FA)

L10 3038 SEA FILE=REGISTRY SUB=L8 SSS FUL L7

L11 19796 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 OR OLIGOAMIN? OR OLIGO(W)A  
MIN?

L12 46732 SEA FILE=HCAPLUS ABB=ON PLU=ON PLASMIDS+OLD,NT/CT

L13 61371 SEA FILE=HCAPLUS ABB=ON PLU=ON OLIGONUCLEOTIDES+OLD,NT/CT

L14 34176 SEA FILE=HCAPLUS ABB=ON PLU=ON ANTISENSE

L15 436880 SEA FILE=HCAPLUS ABB=ON PLU=ON PEPTIDES+NT/CT

L16 715223 SEA FILE=HCAPLUS ABB=ON PLU=ON PROTEINS+OLD/CT

L27 14883 SEA FILE=HCAPLUS ABB=ON PLU=ON DEXTRAN+NT/CT

L28 2206 SEA FILE=HCAPLUS ABB=ON PLU=ON PULLULAN/CT

L29 164682 SEA FILE=HCAPLUS ABB=ON PLU=ON CELLULOSE+NT/CT

L30 3441 SEA FILE=HCAPLUS ABB=ON PLU=ON INULIN/CT

L31 13389 SEA FILE=HCAPLUS ABB=ON PLU=ON CHITOSAN/CT

L32 8600 SEA FILE=HCAPLUS ABB=ON PLU=ON ALGINIC ACID+NT/CT

L33 10929 SEA FILE=HCAPLUS ABB=ON PLU=ON HYALURONIC ACID/CT

L34 208144 SEA FILE=HCAPLUS ABB=ON PLU=ON (L27 OR L28 OR L29 OR L30 OR  
L31 OR L32 OR L33)

L35 13665 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 AND (L12 OR L13 OR L14 OR  
L15 OR L16)

L36 77 SEA FILE=HCAPLUS ABB=ON PLU=ON L35 AND L11

~~L37~~ 19 SEA FILE=HCAPLUS ABB=ON PLU=ON L36 AND (BIODEGRAD? OR  
POLYCAT? OR MACROMOL?)

=&gt; s l3 or l18 or l21 or l37

~~L39~~ 54 L3 OR L18 OR L21 OR L37

=&gt; d l39 ibib ab hitind hitstr 1-54

L39 ANSWER 1 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:180120 HCAPLUS

DOCUMENT NUMBER: 140:218655

TITLE: Surfactant-free oil-in-water emulsions having good  
storage stability and their preparation

INVENTOR(S): Mori, Toshiki

PATENT ASSIGNEE(S): Daiichi Kogyo Seiyaku Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004067939	A2	20040304	JP 2002-231720	20020808
PRIORITY APPLN. INFO.:			JP 2002-231720	20020808

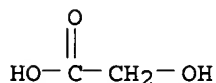
AB The emulsions, useful for cosmetics, agricultural chems., pharmaceuticals,  
etc., are prepared by phase conversion of water-in-oil emulsions containing  
fatty acids and/or higher alcs. and oil-insol. anionic or cationic  
macromols., by addition of aqueous phases. The ionic macromols

. may be CM-cellulose Na salt or vinylpyrrolidone-N,N-dimethylaminoethyl methacrylate copolymer salts. Thus, a mixture of Na CM-cellulose, glycerin, and water was poured into an oil phase consisting of isostearic acid, glyceryl trioctanoate, fluidized paraffin, and di-Me polysiloxane to form a W/O emulsion, to which carboxyvinyl polymer, triethanolamine, and water was added to convert the emulsion into O/W emulsion with good storage stability.

IC ICM C08L101-02  
ICS A61K007-00; C08J003-02; C08K005-05; C08K005-09; A23D007-00  
CC 37-6 (Plastics Manufacture and Processing)  
IT **Polyelectrolytes**  
(cationic; preparation of surfactant-free oil-in-water-in-oil emulsions having good storage stability)  
IT 56-81-5, Glycerin, uses 102-71-6, Triethanolamine, uses 538-23-8, Glyceryl trioctanoate 2724-58-5, Isostearic acid 9003-04-7, Acrylic acid homopolymer sodium salt 9004-32-4, Carboxymethyl cellulose sodium salt 53633-54-8  
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(preparation of surfactant-free oil-in-water-in-oil emulsions having good storage stability)  
IT 9004-32-4, Carboxymethyl cellulose sodium salt  
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(preparation of surfactant-free oil-in-water-in-oil emulsions having good storage stability)  
RN 9004-32-4 HCAPLUS  
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)  
  
CM 1  
  
CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2  
  
CRN 79-14-1  
CMF C2 H4 O3



L39 ANSWER 2 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2004:13500 HCAPLUS  
DOCUMENT NUMBER: 140:258892  
TITLE: Dextran-spermine polycation: an efficient nonviral vector for in vitro and in vivo gene transfection  
AUTHOR(S): Hosseinkhani, H.; Azzam, T.; Tabata, Y.; Domb, A. J.  
CORPORATE SOURCE: Field of Tissue Engineering, Department of Biomaterials, Kyoto University, Kyoto, Japan

SOURCE: Gene Therapy (2004), 11(2), 194-203  
CODEN: GETHEC; ISSN: 0969-7128  
PUBLISHER: Nature Publishing Group  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Dextran-spermine cationic polysaccharide was prepared by means of reductive amination between oxidized dextran and the natural oligoamine spermine. The formed Schiff-base imine-based conjugate was reduced with borohydride to obtain the stable amine-based conjugate. The transfection efficiency of the synthetic dextran-spermine was assessed in vitro on HEK293 and NIH3T3 cell lines and found to be as high as the DOTAP/Chol 1/1 lipid-based transfection reagent. Modification of the dextran-spermine polycation with polyethylene glycol resulted in high transfection yield in serum-rich medium. I.m. injection in mice of dextran-spermine-pSV-LacZ complex induced high local gene expression compared to low expression of the naked DNA. I.v. injection of a dispersion of the dextran-spermine-pSV-LacZ complex resulted with no expression in all examined organs. When the partially PEGylated dextran-spermine-pSV-LacZ complex was i.v. applied, a high gene expression was detected mainly in the liver. Preliminary targeting studies indicated that the PEGylated dextran-spermine-pSV-LacZ complex bound to galactose receptor of liver parenchymal cells rather than the mannose receptor of liver nonparenchymal cells. This work offers a new biodegradable polycation based on natural components, which is capable of transfecting cells and tissues in vitro and in vivo.

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 1, 3

IT 71-44-3DP, Spermine, conjugates with oxidized dextran and polyethylene glycol derivative 9004-54-0DP, Dextran, conjugates with spermine and polyethylene glycol derivative 124661-64-9DP, reaction products with dextran-spermine conjugate

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(dextran-spermine polycation as efficient nonviral vector for in vitro and in vivo gene transfection)

IT 9004-54-0DP, Dextran, conjugates with spermine and polyethylene glycol derivative

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(dextran-spermine polycation as efficient nonviral vector for in vitro and in vivo gene transfection)

RN 9004-54-0 HCAPLUS

CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 3 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:599036 HCAPLUS

DOCUMENT NUMBER: 139:208423

TITLE: Dextran-spermine conjugate: An efficient vector for gene delivery

AUTHOR(S): Azzam, T.; Eliyahu, H.; Makovitzki, A.; Domb, A. J.

CORPORATE SOURCE: Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine, The Hebrew University of Jerusalem, Jerusalem, 91120, Israel

SOURCE: Macromolecular Symposia (2003), 195(2002 IUPAC World Polymer Congress), 247-261



CODEN: MSYMEC; ISSN: 1022-1360  
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Cationic Polysaccharides based on **oligoamine**-dextran conjugates were synthesized and tested as vectors for gene transfection. Dextran with 40 kDa in average mol. weight was oxidized under mild conditions by potassium periodate to obtain the resp. polyaldehydes in relatively high yields (.apprx.90%). The oxidized dextran was reacted by reductive amination with various **oligoamines** of 2 to 4 amino groups to obtain the corresponding imine-conjugates. These water-soluble polymers were then reduced by excess of sodium borohydride to obtain the corresponding amine-conjugates in 30-40% overall yield. The electrostatic interactions of the representative polycations with plasmid DNA were evaluated as a function of charge ratio (+/-, polymer/DNA) and ionic strength of the medium applying the ethidium-bromide quenching assay. Although most synthetic polycations formed stable complexes with Plasmid DNAs, only the dextran-spermine conjugate of a defined amino content and mol. weight was able to transfect cells with high efficiency.

CC 3-1 (Biochemical Genetics)

IT 71-44-3D, Spermine, conjugates with oxidized dextran 124-20-9D, Spermidine, conjugates with oxidized dextran 4605-14-5D, N,N'-Bis-(3-aminopropyl)-1;3-propanediamine, conjugates with oxidized dextran 9004-54-0D, Dextran, oxidized, conjugates with **oligoamines** 30734-81-7D, conjugates with oxidized dextran  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(dextran-spermine conjugate as vector for gene delivery)

IT 9004-54-0D, Dextran, oxidized, conjugates with **oligoamines**  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(dextran-spermine conjugate as vector for gene delivery)

RN 9004-54-0 HCAPLUS

CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 4 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:32677 HCAPLUS

DOCUMENT NUMBER: 139:185510

TITLE: Polymeric vectors for gene therapy - synthesis and biological activity of polysaccharide based polycations

AUTHOR(S): Azzam, T.; Makovitzki, A.; Eliyahu, H.; Raskin, A.; Bernholz, Y.; Domb, A. J.; Linial, M.

CORPORATE SOURCE: Dep. of Med. Chem. and Natural Products, School of Pharm., Fac. of Med., The Hebrew Univ., Jerusalem, Israel

SOURCE: Zeszyty Naukowe Politechniki Slaskiej, Chemia (2001), 146, 15-22

CODEN: ZNSCAM; ISSN: 0372-9494

PUBLISHER: Wydawnictwo Politechniki Slaskiej

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Over 200 different polycations were prepared starting from various polysaccharides and **oligoamines**, mainly spermine and spermidine. Although, most of these conjugates formed stable complexes with various

plasmids as determined by turbidity expts., only a few polycations were found to be active in transfecting cells. This work indicates that the structure of the polycation has a significant role in the transfection activity.

CC 63-6 (Pharmaceuticals)

IT Polysaccharides, biological studies

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)

(complexes with polycations; synthesis and transfection activity of polysaccharide based polycations as vectors for gene therapy)

IT 71-44-3DP, Spermine, reaction products with polysaccharide 107-15-3DP,  
1,2-Ethanediamine, reaction products with polysaccharide 111-40-0DP,  
Diethylene triamine, reaction products with polysaccharide 124-20-9DP,  
Spermidine, reaction products with polysaccharide 9002-98-6DP, reaction  
products with polysaccharide 9004-54-0DP, Dextran, reaction  
products with polyamines 9036-66-2DP, Arabinogalactan, reaction  
products with polyamines 9057-02-7DP, Pullulan, reaction  
products with polyamines 26545-55-1DP, Propane diamine, reaction  
products with polysaccharide 30140-39-7DP, Hexane diamine, reaction  
products with polysaccharide 69468-17-3DP, Butane diamine, reaction  
products with polysaccharide 75413-84-2DP, Octane diamine, reaction  
products with polysaccharide 581776-15-0DP, reaction products with  
polysaccharide

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)

(synthesis and transfection activity of polysaccharide based polycations as vectors for gene therapy)

IT 9004-54-0DP, Dextran, reaction products with polyamines  
9036-66-2DP, Arabinogalactan, reaction products with polyamines  
9057-02-7DP, Pullulan, reaction products with polyamines

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)

(synthesis and transfection activity of polysaccharide based polycations as vectors for gene therapy)

RN 9004-54-0 HCAPLUS

CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9036-66-2 HCAPLUS

CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9057-02-7 HCAPLUS

CN Pullulan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 5 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:26050 HCAPLUS

DOCUMENT NUMBER: 139:219084

TITLE: In vitro cytotoxicity testing of polycations:  
influence of polymer structure on cell viability and  
hemolysis

AUTHOR(S): Fischer, Dagmar; Li, Youxin; Ahlemeyer, Barbara;  
Krieglstein, Josef; Kissel, Thomas

CORPORATE SOURCE: Department of Pharmaceuticals and Biopharmacy,  
University of Marburg, Marburg, 35032, Germany

SOURCE: Biomaterials (2003), 24(7), 1121-1131  
CODEN: BIMADU; ISSN: 0142-9612  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A comparative in vitro cytotoxicity study with different water-soluble, cationic macromols. which have been described as gene delivery systems was performed. Cytotoxicity in L929 mouse fibroblasts was monitored using the MTT assay and the release of the cytosolic enzyme lactate dehydrogenase (LDH). Microscopic observations were carried out as indicators for cell viability. Furthermore, hemolysis of erythrocytes was quantified spectrophotometrically. To determine the nature of cell death induced by the polycations, the nuclear morphol. after DAPI staining and the inhibition of the toxic effects by the caspase inhibitor zVAD.fmk were investigated. All assays yielded comparable results and allowed the following ranking of the polymers with regard to cytotoxicity: polyethylenimine = poly(L-lysine) > poly(diallyldimethylammonium chloride) > diethylaminoethyl dextran > poly(vinylpyridinium bromide) > Starburst dendrimer > cationized albumin > native albumin. The magnitude of the cytotoxic effects of all polymers were found to be time- and concentration dependent. The mol. weight as well as the cationic charge d. of the polycations were confirmed as key parameters for the interaction with the cell membranes and consequently, the cell damage. Evaluating the nature of cell death induced by poly(ethylenimine), we did not detect any indication for apoptosis suggesting that the polymer induced a necrotic cell reaction. Cell nuclei retained their size, chromatin was homogeneously distributed and cell membranes lost their integrity very rapidly at an early stage. Furthermore, the broad spectrum caspase inhibitor zVAD.fmk did not inhibit polyethylenimine-induced cell damage. Insights into the structure-toxicity relationship are necessary to optimize the cytotoxicity and biocompatibility of non-viral gene delivery systems.

CC 63-5 (Pharmaceuticals)

IT **Polyelectrolytes**

(cationic; polymer structure effect on cell viability and hemolysis in in vitro cytotoxicity testing of polycations)

IT 124-09-4D, Hexamethylenediamine, reaction products with serum albumins  
9002-98-6, Polyethylenimine 9015-73-0 25104-18-1, Polylysine  
26062-79-3, Poly(diallyldimethylammonium chloride) 32492-40-3,  
Pyridinium, 1-ethenyl-, bromide, homopolymer 38000-06-5, Polylysine  
RL: ADV (Adverse effect, including toxicity); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)

(polymer structure effect on cell viability and hemolysis in in vitro cytotoxicity testing of polycations)

IT 9015-73-0

RL: ADV (Adverse effect, including toxicity); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)

(polymer structure effect on cell viability and hemolysis in in vitro cytotoxicity testing of polycations)

RN 9015-73-0 HCAPLUS

CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0

CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
CMF C6 H15 N OEt2N-CH2-CH2-OHREFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 6 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2003:23345 HCAPLUS  
DOCUMENT NUMBER: 138:78488  
TITLE: Novel methods and compositions for delivering  
**macromolecules** to or via the respiratory tract  
INVENTOR(S): Bot, Adrian I.; Dellamary, Luis A.; Smith, Dan J.  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ., 19 pp., Cont.-in-part of U.S.  
Ser. No. 919,477.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003007930	A1	20030109	US 2002-132215	20020426
US 2002106368	A1	20020808	US 2001-919477	20010730
PRIORITY APPLN. INFO.:			US 2000-221544P	P 20000728
			US 2001-286891P	P 20010426
			US 2001-919477	A2 20010730

AB Methods and compns. for delivering **macromols.** to or via the  
respiratory tract, such that the **macromols.** exhibit improved  
local and/or systemic bioavailability are provided. Such methods utilize  
lipid-based microstructures formed in combination with at least one  
bioactive **macromol.**, which have a superior ability to rapidly  
release the bioactive **macromol.**(s) thereby resulting in improved  
local and/or systemic bioavailability of the bioactive **macromol**  
. (s). Such improved bioavailability is believed to be due, in part, to  
reduction of scavenging by bronchoalveolar macrophages and/or mucociliary  
clearance. Compns. with improved bioavailability are provided comprising  
a plurality of lipid-based microstructures formed in combination with at  
least one bioactive **macromol.**, wherein the bioavailability of  
the bioactive **macromol.** is improved by modifying the rate of  
release of the bioactive **macromol.** from the microstructure  
thereby reducing scavenging by bronchoalveolar macrophages and/or  
mucociliary clearance. Construction of spray-dried metal/lipid-based  
microstructures were manufactured The final % weight composition of the  
microstructure  
was dipalmitoylphosphatidylcholine: CaCl2.2H2O:lactose:hIgG (48:12:15:25).  
The resulting powder comprised distinct, compact particles of geometric  
sizes in the range of 1-5  $\mu$ m.

IC ICM A61L009-04  
NCL 424045000  
CC 63-6 (Pharmaceuticals)

ST **macromol** delivery respiratory tract hIgG

IT Immunoglobulins  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (-like mols.; novel methods and compns. for delivering  
**macromols.** to or via respiratory tract)

IT Immunoglobulins  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (G; novel methods and compns. for delivering **macromols.** to or  
 via respiratory tract)

IT Alkanes, biological studies  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (fluoro, hydro-; novel methods and compns. for delivering  
**macromols.** to or via respiratory tract)

IT Hydrocarbons, biological studies  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (fluoro; novel methods and compns. for delivering **macromols.**  
 to or via respiratory tract)

IT Drug delivery systems  
 (liposomes; novel methods and compns. for delivering **macromols**  
 . to or via respiratory tract)

IT Antibodies  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (monoclonal; novel methods and compns. for delivering **macromols**  
 . to or via respiratory tract)

IT Atomizing (spraying)  
 Detergents  
 Drug bioavailability  
 Micelles  
 Microstructure  
 Propellants (sprays and foams)  
 Respiratory tract  
 (novel methods and compns. for delivering **macromols.** to or  
 via respiratory tract)

IT Alcohols, biological studies  
 Antigens  
 Carbohydrates, biological studies  
 Ethers, biological studies  
 Gangliosides  
 Glycerophospholipids  
 Hydrocarbons, biological studies  
**Macromolecular** compounds  
**Mucopolysaccharides, biological studies**  
 Nucleotides, biological studies  
 Peptides, biological studies  
 Perfluorocarbons  
 Phosphatidylcholines, biological studies  
 Phosphatidylethanolamines, biological studies  
 Phosphatidylglycerols  
 Phosphatidylinositols  
 Phosphatidylserines  
 Polyoxyalkylenes, biological studies  
 Proteins  
 Sphingomyelins  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (novel methods and compns. for delivering **macromols.** to or  
 via respiratory tract)

IT **Cations**  
 (polyvalent; novel methods and compns. for delivering  
**macromols.** to or via respiratory tract)

IT Drug delivery systems  
(powders, inhalants; novel methods and compns. for delivering  
macromols. to or via respiratory tract)

IT 50-70-4, Sorbitol, biological studies 50-99-7, Glucose, biological  
studies 57-50-1, Sucrose, biological studies 63-42-3, Lactose  
69-65-8, Mannitol 69-79-4, Maltose 99-20-7, Trehalose 512-69-6,  
Raffinose 608-66-2, Galactitol 1398-61-4, Chitin 2644-64-6,  
Dipalmitoyl phosphatidylcholine 2954-45-2 2954-49-6 3036-82-6,  
Dipalmitoyl phosphatidyl serine 3458-28-4, Mannose 4539-70-2,  
Distearoyl phosphatidyl choline 9000-69-5, Pectins  
9004-34-6, Cellulose, biological studies 9004-53-9,  
Dextrins 9004-54-0, Dextrans, biological studies  
9005-25-8, Starch, biological studies 9005-27-0,  
Hetastarch 9005-65-6, Tween 80 9005-80-5, Inulin  
9007-28-7, Chondroitin sulfate 9012-76-4, Chitosan  
9036-88-8, Mannan 14127-61-8, Calcium ion, biological studies  
18656-38-7, Dimyristoyl phosphatidylcholine 22537-22-0, Magnesium ion,  
biological studies 22537-23-1, Aluminum ion, biological studies  
23713-49-7, Zinc ion, biological studies 25301-02-4, Tyloxapol  
25322-68-3, Polyethylene glycol 36653-82-4, Cetyl alcohol 41017-85-0,  
Dioctanoyl phosphatidylcholine 53892-41-4 64044-51-5, Lactose  
monohydrate 106392-12-5, Poloxamer 188 481722-96-7  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(novel methods and compns. for delivering macromols. to or  
via respiratory tract)

IT 1398-61-4, Chitin 9000-69-5, Pectins 9004-34-6  
, Cellulose, biological studies 9004-53-9, Dextrins  
9004-54-0, Dextrans, biological studies 9005-25-8,  
Starch, biological studies 9005-27-0, Hetastarch  
9005-80-5, Inulin 9007-28-7, Chondroitin sulfate  
9012-76-4, Chitosan 9036-88-8, Mannan  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(novel methods and compns. for delivering macromols. to or  
via respiratory tract)

RN 1398-61-4 HCAPLUS  
CN Chitin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9000-69-5 HCAPLUS  
CN Pectin (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9004-34-6 HCAPLUS  
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9004-53-9 HCAPLUS  
CN Dextrin (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9004-54-0 HCAPLUS  
CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9005-25-8 HCAPLUS  
CN Starch (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9005-27-0 HCAPLUS

CN Starch, 2-hydroxyethyl ether (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9005-25-8  
CMF Unspecified  
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 107-21-1  
CMF C2 H6 O2

HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

RN 9005-80-5 HCAPLUS  
CN Inulin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9007-28-7 HCAPLUS  
CN Chondroitin, hydrogen sulfate (9CI) (CA INDEX NAME)

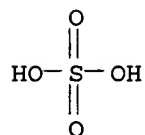
CM 1

CRN 9007-27-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9  
CMF H2 O4 S



RN 9012-76-4 HCAPLUS  
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9036-88-8 HCAPLUS  
CN D-Mannan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 7 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2002:914376 HCAPLUS  
DOCUMENT NUMBER: 138:126864

TITLE: Cationic Polysaccharides for Gene Delivery  
AUTHOR(S): Azzam, Tony; Raskin, Arthur; Makovitzki, Arik; Brem, Henry; Vierling, Pierre; Lineal, Michal; Domb, Abraham J.  
CORPORATE SOURCE: Department of Medicinal Chemistry and Natural Products, School of Pharmacy-Faculty of Medicine, Hebrew University, Jerusalem, 91120, Israel  
SOURCE: Macromolecules (2002), 35(27), 9947-9953  
CODEN: MAMOBX; ISSN: 0024-9297  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Cationic polysaccharides based on spermine-dextran conjugates were synthesized and tested as vectors for gene transfection. Dextrans of 10-380 kDa were oxidized under mild conditions by potassium periodate to obtain the resp. polyaldehydes in 90% overall yield. The oxidized dextrans were reacted by reductive amination with increasing amts. of spermine, and the efficacy of conjugation between the **oligoamine** and polysaccharides was studied as a function of spermine/aldehyde mole ratio, pH, and temperature of medium. The optimal conjugation yields were obtained at 1.25 mol ratio (spermine/aldehyde groups) and pH 11 at room temperature. Under these conditions, .apprx.2  $\mu\text{mol/mg}$  (spermine/polysaccharide) conjugation was achieved with 25-30% of the spermine moieties were conjugated in both sides to form branched polymers. The water-soluble polymers obtained were interacted with pCMV-GFP plasmid to form nanoparticles that were introduced to HEK293 and NIH3T3 cells in vitro for transfection efficacy assessment. Out of about 50 different polymer structures, only spermine-dextran of 6000-8000 Da, spermine content of .apprx.2  $\mu\text{mol/mg}$ , and degree of branching of 25-30% was active in transfecting about 50% of the cells while all other polymers were significantly less active.

CC 63-5 (Pharmaceuticals)

Section cross-reference(s): 33

IT **Polysaccharides, biological studies**

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(cationic polysaccharides for gene delivery)

IT 71-44-3, Spermine **9004-54-0**, Dextran, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(cationic polysaccharides for gene delivery)

IT **9004-54-0**, Dextran, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(cationic polysaccharides for gene delivery)

RN 9004-54-0 HCAPLUS

CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 8 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:638194 HCAPLUS

DOCUMENT NUMBER: 137:152017

TITLE: High throughput assay for monitoring  
**polycation** or polyanion molecular weight,  
degradation or synthesis

INVENTOR(S): Mayer, Raphael; Shemesh, Simha; Ayal-HersHKovitz, Maty

PATENT ASSIGNEE(S): Insight Strategy and Marketing Ltd., Israel

SOURCE: U.S. Pat. Appl. Publ., 27 pp.



DOCUMENT TYPE: CODEN: USXXCO  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1 English  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002115071	A1	20020822	US 2001-753692	20010104
US 6630295	B2	20031007		

PRIORITY APPLN. INFO.: US 2001-753692 20010104

AB A method of testing an agent for its potential at modulating induction of a mol. weight change of a first polyion is disclosed. The method is effected by (a) subjecting the first polyion to conditions under-which the first polyion undergoing the mol. weight change in a presence, in an absence or under several different concns. of the agent; (b) interacting the first polyion with a second polyion having an opposite charge, the second polyion being fluorescently labeled; (c) providing reaction conditions so as to allow mol. weight discriminative interaction between the first polyion and the second polyion; and (d) employing a fluorescence polarization assay for determining a modulating effect of the agent on the induction of the mol. weight change of the first polyion.

IC ICM C12Q001-68  
 ICS G01N033-53; C12P021-06; C12P019-34

NCL 435006000

CC 9-5 (Biochemical Methods)

ST high throughput assay polycation polyanion mol wt degrdn

IT **Peptides, biological studies**

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(connective tissue activating; high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT Connective tissue  
 Molecular weight  
 Polarized fluorescence  
 Viscosity  
 pH

(high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT Glycosaminoglycans, biological studies  
 Nucleic acids

Proteoglycans, biological studies

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT Enzymes, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT Anions  
 Cations

(polyvalent; high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT 71-44-3, Spermine 124-20-9, Spermidine 1398-61-4, Chitin  
 9004-34-6, Cellulose, biological studies 9005-49-6, Heparin,  
 biological studies 9050-30-0, Heparan sulfate 25104-18-1, Poly  
 lysine 25212-18-4, Polyarginine 25513-46-6,

Polyglutamic acid 25608-40-6, Polyaspartic acid

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT 9001-45-0,  $\beta$  Glucuronidase 9001-54-1, Hyaluronidase 9012-81-1, Chondroitinase 9025-39-2, Heparinase 52227-76-6, Heparitinase 71965-42-9, Glycosaminoglycan Sulfatase

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

IT 71-44-3, Spermine 9004-34-6, Cellulose, biological studies 25104-18-1, Poly lysine 25212-18-4, Polyarginine 25513-46-6, Polyglutamic acid 25608-40-6, Polyaspartic acid

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(high throughput assay for monitoring polycation or polyanion mol. weight, degradation or synthesis)

RN 71-44-3 HCAPLUS

CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$\text{H}_2\text{N}-(\text{CH}_2)_3-\text{NH}-(\text{CH}_2)_4-\text{NH}-(\text{CH}_2)_3-\text{NH}_2$

RN 9004-34-6 HCAPLUS

CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 25104-18-1 HCAPLUS

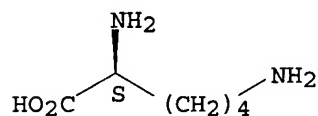
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1

CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 25212-18-4 HCAPLUS

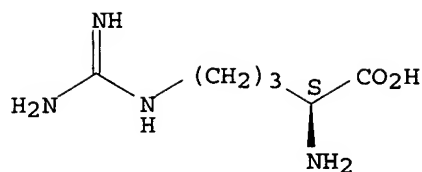
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-79-3

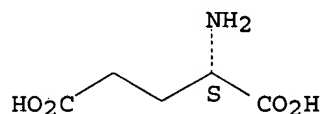
CMF C6 H14 N4 O2

Absolute stereochemistry.



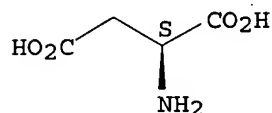
RN 25513-46-6 HCAPLUS  
 CN L-Glutamic acid, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 56-86-0  
 CMF C5 H9 N O4

Absolute stereochemistry.



RN 25608-40-6 HCAPLUS  
 CN L-Aspartic acid, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 56-84-8  
 CMF C4 H7 N O4

Absolute stereochemistry. Rotation (+).



L39 ANSWER 9 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2002:536420 HCAPLUS  
 DOCUMENT NUMBER: 137:99004  
 TITLE: Cationic polysaccharide compositions for gene transfer  
 INVENTOR(S): Domb, Abraham J.  
 PATENT ASSIGNEE(S): Polygene Ltd., Israel  
 SOURCE: Eur. Pat. Appl., 34 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1222926	A1	20020717	EP 2002-250178	20020110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

US 2002146826 A1 20021010 US 2002-44538 20020110  
 PRIORITY APPLN. INFO.: IL 2001-140844 A 20010110

AB A **polycation** composition comprises (i) a polysaccharide chain having an amount of saccharide units ranging from 2 to 2000, (ii) at least one **oligoamine** directly grafted to said polysaccharide chain per each segment of 5 saccharide units, wherein said **oligoamine** is selected from the group consisting of a linear, branched and cyclic alkyl amine having at least two amino groups, and (iii) at least one further grafted group selected from the group consisting of a hydrophobic and an amphiphilic group directly grafted to said polysaccharide chain per each segment of 50 saccharide units, wherein said hydrophobic or amphiphilic group includes an aliphatic chain of at least 4 carbons atoms. For example, hydrophobized spermine-dextran **polycations** gave transfection values at 0.2 charge ratio (-/+). Hydrophobized **polycations** (10% or 20% fatty chain, mol/mol) gave the best transfection efficacy at 0.25 charge ratio (-/+). Hydrophobized **polycations** remarkably increase transfection, by at least 2 fold. However, the fatty acid side groups, stearate, octanoate, and myristate were less active than oleate derivs.

IC ICM A61K031-715  
 ICS C08L005-00; C08L005-02; C08B037-00; A61K048-00; A61K047-48

CC 63-6 (Pharmaceuticals)  
 Section cross-reference(s): 1, 3, 33, 74

ST cationic polysaccharide conjugate prepn gene transfer; polysaccharide **oligoamine** hydrophobic amphiphilic polymer graft prepn

IT **Polysaccharides, reactions**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acidic; cationic polysaccharide compns. for gene transfer)

IT **Antisense oligonucleotides**  
 Fatty acids, reactions  
 Ligands  
 Oligonucleotides  
 Peptides, reactions  
 Phospholipids, reactions  
 Polyamines  
 Polysaccharides, reactions  
 Proteins  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cationic polysaccharide compns. for gene transfer)

IT **Polysaccharides, biological studies**  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (cationic; cationic polysaccharide compns. for gene transfer)

IT 57-88-5D, Cholesterol, derivs. 71-44-3, Spermine 112-16-3, Lauroyl chloride 112-76-5, Stearoyl chloride 112-77-6, Oleoyl chloride 112-90-3, Oleylamine 528-50-7, Cellobiose 605-65-2, Dansyl chloride 687-64-9 6066-82-6, N-Hydroxysuccinimide 7144-08-3, Cholesteryl chloroformate 7693-46-1, p-Nitrophenyl chloroformate 9002-98-6 9004-54-0, Dextran, reactions 9004-61-9, Hyaluronic acid 9004-74-4, MPEG 9005-32-7, Alginic acid 9005-80-5, Inulin 9012-76-4, Chitosan 9036-66-2, Arabinogalactan 9057-02-7, Pullulan 114459-62-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cationic polysaccharide compns. for gene transfer)

IT 71-44-3DP, Spermine, reaction product with dextran dialdehyde 14464-30-3P 14464-32-5P 14565-47-0P 19728-66-6P, L-Lysine hydrazide 22102-92-7P 37317-99-0DP, Dextran dialdehyde, reaction product with spermine 37317-99-0P, Dextran dialdehyde 42014-50-6P 69888-86-4P 69888-88-6P 81480-40-2P 124661-64-9DP, reaction product with

dextran-spermine conjugates 124661-64-9P 159592-24-2P 359847-18-0P  
 442515-52-8P 442515-53-9P 442515-54-0P 442515-55-1P 442515-56-2P  
 442515-57-3P 442515-58-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(cationic polysaccharide compns. for gene transfer)

IT 71-44-3DP, Spermine, reaction product with oxidized dextran  
 112-90-3DP, Oleylamine, reaction product with oxidized dextran  
 124-20-9DP, Spermidine, conjugates with chitosan 9004-61-9DP,  
 Hyaluronic acid, polysaccharide conjugates 9005-49-6DP, Heparin,  
 polysaccharide conjugates 9012-76-4DP, Chitosan, conjugates with  
 oligoamines 9036-66-2DP, Arabinogalactan, reaction  
 products with polysaccharides 14464-30-3DP, reaction product with  
 dextran-spermine conjugates 14464-32-5DP, reaction product with  
 dextran-spermine conjugates 14565-47-0DP, reaction product with  
 dextran-spermine conjugates 22102-92-7DP, reaction product with  
 dextran-spermine conjugates 33008-06-9DP, Dansyl hydrazine, reaction  
 product with dextran-spermine conjugates 42014-50-6DP, reaction product  
 with dextran-spermine conjugates 69888-86-4DP, reaction product with  
 dextran-spermine conjugates 69888-88-6DP, reaction product with  
 dextran-spermine conjugates 81480-40-2DP, reaction product with  
 dextran-spermine conjugates 159592-24-2DP, reaction product with  
 dextran-spermine conjugates 359847-18-0DP, reaction product with  
 dextran-spermine conjugates 442515-53-9DP, reaction product with  
 dextran-spermine conjugates

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(cationic polysaccharide compns. for gene transfer)

IT 71-44-3DP, Spermine, quaternized or conjugates with chitosan  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(hydrophilic head group-containing; cationic polysaccharide compns. for gene transfer)

IT 71-44-3, Spermine 9004-54-0, Dextran, reactions  
 9004-61-9, Hyaluronic acid 9005-32-7, Alginic acid  
 9005-80-5, Inulin 9012-76-4, Chitosan 9036-66-2  
 , Arabinogalactan 9057-02-7, Pullulan 114459-62-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(cationic polysaccharide compns. for gene transfer)

RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$\text{H}_2\text{N}-(\text{CH}_2)_3-\text{NH}-(\text{CH}_2)_4-\text{NH}-(\text{CH}_2)_3-\text{NH}_2$

RN 9004-54-0 HCAPLUS  
 CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-61-9 HCAPLUS  
 CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9005-32-7 HCAPLUS  
 CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9005-80-5 HCAPLUS

CN Inulin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9036-66-2 HCAPLUS

CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

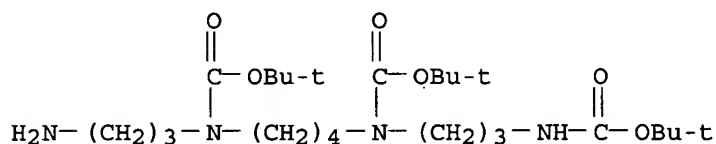
RN 9057-02-7 HCAPLUS

CN Pullulan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 114459-62-0 HCAPLUS

CN 13-Oxa-2,6,11-triazapentadecanoic acid, 11-(3-aminopropyl)-6-[(1,1-dimethylethoxy)carbonyl]-14,14-dimethyl-12-oxo-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



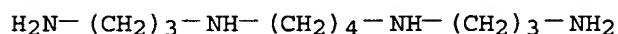
IT 71-44-3DP, Spermine, reaction product with dextran dialdehyde

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(cationic polysaccharide compns. for gene transfer)

RN 71-44-3 HCAPLUS

CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



IT 9004-61-9DP, Hyaluronic acid, polysaccharide conjugates

9005-49-6DP, Heparin, polysaccharide conjugates

9012-76-4DP, Chitosan, conjugates with **oligoamines**

9036-66-2DP, Arabinogalactan, reaction products with polysaccharides

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(cationic polysaccharide compns. for gene transfer)

RN 9004-61-9 HCAPLUS

CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9005-49-6 HCAPLUS

CN Heparin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9036-66-2 HCAPLUS  
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 71-44-3DP, Spermine, quaternized or conjugates with chitosan  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(hydrophilic head group-containing; cationic polysaccharide compns. for  
gene transfer)

RN 71-44-3 HCAPLUS  
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$\text{H}_2\text{N}-(\text{CH}_2)_3-\text{NH}-(\text{CH}_2)_4-\text{NH}-(\text{CH}_2)_3-\text{NH}_2$

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 10 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:350566 HCAPLUS

DOCUMENT NUMBER: 138:112169

TITLE: Highly active polysaccharide based polycations for DNA  
cell transfection

AUTHOR(S): Azzam, T.; Makovitzki, A.; Eliyahu, H.; Raskin, A.;  
Linial, M.; Bernholz, Y.; Domb, A. J.

CORPORATE SOURCE: Department of Medicinal Chemistry and Natural  
Products, The Hebrew University, Jerusalem, 91120,  
Israel

SOURCE: Proceedings - 28th International Symposium on  
Controlled Release of Bioactive Materials and 4th  
Consumer & Diversified Products Conference, San Diego,  
CA, United States, June 23-27, 2001 (2001), Volume 2,  
1187-1188. Controlled Release Society: Minneapolis,  
Minn.

CODEN: 69CNY8

DOCUMENT TYPE: Conference

LANGUAGE: English

AB A new class of polycations based on **oligoamine** conjugated on  
natural polysaccharides have been synthesized and tested for their  
activity as gene carriers. The transfection efficiency was evaluated  
in-vitro in a few cell types using several plasmid marker genes. From  
about 100 different conjugate derivs. only a few showed to be effective in  
gene transfection. The most effective polycation was spermine, a natural  
alkyl tetra-amine, grafted on dextran.

CC 63-5 (Pharmaceuticals)

IT DNA

**Polysaccharides, biological studies**

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(highly active polysaccharide based polycations for DNA cell  
transfection)

IT 71-44-3D, Spermine, conjugate with arabinogalactan, dextran or pullulan  
124-20-9D, Spermidine, conjugate with dextran 9002-98-6D, conjugate with  
arabinogalactan or dextran 9004-54-0D, Dextran, conjugate with  
spermine, polyethyleneimine, spermidine 9036-66-2D,  
Arabinogalactan, conjugate with spermine or polyethyleneimine  
9057-02-7D, Pullulan, conjugate with spermine 26545-55-1,  
Propanediamine

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(highly active polysaccharide based polycations for DNA cell transfection)

IT 9004-54-0D, Dextran, conjugate with spermine, polyethyleneimine, spermidine 9036-66-2D, Arabinogalactan, conjugate with spermine or polyethyleneimine 9057-02-7D, Pullulan, conjugate with spermine

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(highly active polysaccharide based polycations for DNA cell transfection)

RN 9004-54-0 HCAPLUS

CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9036-66-2 HCAPLUS

CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9057-02-7 HCAPLUS

CN Pullulan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 11 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:347052 HCAPLUS

DOCUMENT NUMBER: 138:78294

TITLE: Charged film capsules: local controlled release for the treatment of Helicobacter pylori infection and associated peptic ulcer disease

AUTHOR(S): Kemmerer, C. J.; Speaker, T. J.

CORPORATE SOURCE: School of Pharmacy, Temple University, Philadelphia, PA, 19140, USA

SOURCE: Proceedings - 28th International Symposium on Controlled Release of Bioactive Materials and 4th Consumer & Diversified Products Conference, San Diego, CA, United States, June 23-27, 2001 (2001), Volume 1, 680-681. Controlled Release Society: Minneapolis, Minn.

CODEN: 69CNY8

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Amoxicillin was captured efficiently in charged film capsules prepared from iota carrageenan and four different **oligoamines**. Its release was independent of ionic strength at gastric pH, but increasing ionic strength induced gelling which slowed release at pH 7.3.

CC 63-5 (Pharmaceuticals)

ST amoxicillin controlled release carrageenan **oligoamine**

IT Dissolution

Dissolution rate

(amoxicillin local controlled release from carrageenan/  
**oligoamine** capsules)

IT Drug delivery systems

(capsules, controlled-release; amoxicillin local controlled release from carrageenan/**oligoamine** capsules)

IT 71-44-3, Spermine 112-24-3, Triethylenetetramine 112-57-2,

Tetraethylenepentamine 124-20-9, Spermidine 9062-07-1,

ι-Carrageenan 26787-78-0, Amoxicillin

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES



(Uses)  
(amoxicillin local controlled release from carrageenan/  
oligoamine capsules)  
IT 9062-07-1,  $\iota$ -Carrageenan  
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES  
(Uses)  
(amoxicillin local controlled release from carrageenan/  
oligoamine capsules)  
RN 9062-07-1 HCAPLUS  
CN  $\iota$ -Carrageenan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 12 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2002:237763 HCAPLUS  
DOCUMENT NUMBER: 137:10872  
TITLE: Polysaccharide-Oligoamine Based Conjugates  
for Gene Delivery  
AUTHOR(S): Azzam, Tony; Eliyahu, Hagit; Shapira, Libi; Linial,  
Michal; Barenholz, Yechezkel; Domb, Abraham J.  
CORPORATE SOURCE: Department of Medicinal Chemistry and Natural  
Products, School of Pharmacy, Faculty of Medicine, The  
Hebrew University, Jerusalem, 91120, Israel  
SOURCE: Journal of Medicinal Chemistry (2002), 45(9),  
1817-1824  
CODEN: JMCMAR; ISSN: 0022-2623  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB This work describes a versatile and universal **polycation** system  
based on **oligoamines** grafted on natural polysaccharides that is  
capable of complexing various plasmids and administering them into various  
cells in high yield to produce a desired protein. These  
**polycations** are expected to better meet the requirements for  
effective complexation and delivery of plasmid or an **antisense**  
and to **biodegrade** into nontoxic components at a controlled rate.  
The developed **biodegradable polycations** are based on  
spermine, a natural tetramine, conjugated to dextran or arabinogalactan.  
These **polycations** were prepared by reductive amination of oxidized  
polysaccharides with the desired **oligoamines**. The Schiff base  
conjugates thus obtained were reduced to the stable amine conjugates by  
sodium borohydride. Over 300 different **polycations** were prepared  
starting from various polysaccharides and **oligoamines**, mainly  
**oligoamines** of 2-4 amino groups. Although most of these  
conjugates formed stable complexes with various plasmids as determined by  
turbidity expts., only a few **polycations** were active in  
transfecting cells. Thus, the structure of the **polycation** plays  
a significant role in the transfection activity of **polycations**.

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 3, 33

ST polysaccharide **oligoamine** conjugate gene delivery prepn

IT Animal cell line

(3T3; polysaccharide-**oligoamine**-based conjugates for gene  
delivery)

IT Animal cell line

(EPC; polysaccharide-**oligoamine**-based conjugates for gene  
delivery)

IT Animal cell line  
(Hek 293; polysaccharide-oligoamine-based conjugates for gene delivery)

IT Polyamines  
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(conjugates with dextran aldehyde; polysaccharide-oligoamine-based conjugates for gene delivery)

IT Amines, biological studies  
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(conjugates, with dextran aldehyde; polysaccharide-oligoamine-based conjugates for gene delivery)

IT Drug delivery systems  
Gene therapy  
Human  
Molecular weight distribution  
Oxidation  
Plasmid vectors  
Transformation, genetic  
(polysaccharide-oligoamine-based conjugates for gene delivery)

IT 9004-54-0, Dextran, reactions 9036-66-2, Arabinogalactan  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polysaccharide-oligoamine-based conjugates for gene delivery)

IT 37317-99-ODP, reaction product with oligamines, reduced 37317-99-OP, Dextran dialdehyde  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(polysaccharide-oligoamine-based conjugates for gene delivery)

IT 71-44-3DP, Spermine, reaction product with dextran dialdehyde, reduced 107-15-3DP, 1,2-Ethanediamine, reaction product with dextran dialdehyde, reduced 109-76-2DP, 1,3-Propanediamine, reaction product with dextran dialdehyde, reduced 110-60-1DP, 1,4-Butanediamine, reaction product with dextran dialdehyde, reduced 110-70-3DP, reaction product with dextran dialdehyde, reduced 111-40-0DP, reaction product with dextran dialdehyde, reduced 124-09-4DP, 1,6-Hexanediamine, reaction product with dextran dialdehyde, reduced 124-20-9DP, Spermidine, reaction product with dextran dialdehyde, reduced 373-44-4DP, 1,8-Octanediamine, reaction product with dextran dialdehyde, reduced 929-59-9DP, reaction product with dextran dialdehyde, reduced 4605-14-5DP, reaction product with dextran dialdehyde, reduced 4741-99-5DP, reaction product with dextran dialdehyde, reduced 9002-98-6DP, Aziridine homopolymer, reaction products with dextran dialdehyde, reduced 9036-66-2DP, Arabinogalactan, oxidized, reaction products with oligoamines, reduced 10563-26-5DP, reaction product with dextran dialdehyde, reduced  
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(polysaccharide-oligoamine-based conjugates for gene delivery)

IT 9004-54-0, Dextran, reactions 9036-66-2, Arabinogalactan  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polysaccharide-oligoamine-based conjugates for gene delivery)

RN 9004-54-0 HCAPLUS  
CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

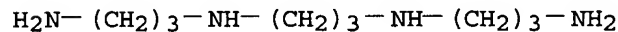
RN 9036-66-2 HCAPLUS  
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

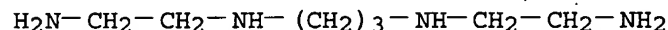
IT 71-44-3DP, Spermine, reaction product with dextran dialdehyde,  
reduced 4605-14-5DP, reaction product with dextran dialdehyde,  
reduced 4741-99-5DP, reaction product with dextran dialdehyde,  
reduced 9036-66-2DP, Arabinogalactan, oxidized, reaction  
products with oligoamines, reduced 10563-26-5DP,  
reaction product with dextran dialdehyde, reduced  
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological  
study); PREP (Preparation); USES (Uses)  
(polysaccharide-oligoamine-based conjugates for gene  
delivery)  
RN 71-44-3 HCAPLUS  
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 4605-14-5 HCAPLUS  
CN 1,3-Propanediamine, N,N'-bis(3-aminopropyl)- (9CI) (CA INDEX NAME)



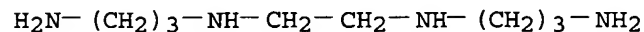
RN 4741-99-5 HCAPLUS  
CN 1,3-Propanediamine, N,N'-bis(2-aminoethyl)- (8CI, 9CI) (CA INDEX NAME)



RN 9036-66-2 HCAPLUS  
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 10563-26-5 HCAPLUS  
CN 1,3-Propanediamine, N,N''-1,2-ethanediylbis- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 13 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:205868 HCAPLUS

DOCUMENT NUMBER: 136:371335

TITLE: Behavior of  $\gamma$ -ray-irradiated pullulan in aqueous  
solutions of cationic (cetyltrimethylammonium  
hydroxide) and anionic (sodium dodecyl sulfate)  
surfactants

AUTHOR(S): Shingel, K. I.; Petrov, P. T.

CORPORATE SOURCE: Scientific Pharmaceutical Centre, Belmedpreparaty  
Pharmaceutical Co., Minsk, 220001, Belarus

SOURCE: Colloid and Polymer Science (2002), 280(2), 176-182  
CODEN: CPMSB6; ISSN: 0303-402X

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Gamma ray-irradiated pullulan (I) **macromols.** acquire properties of an anionic polyelectrolyte and, upon aggregation with the oppositely charged surfactant cetyltrimethylammonium hydroxide, are shown to precipitate according to their mol. weight. This provides a convenient means for obtaining polymer fractions with a narrower mol.-weight distribution than those of the original samples. The method can be employed to obtain fractions of radiation-modified I required in the production of a blood-plasma substitute. Anionic properties of  $\gamma$ -ray-irradiated I also manifest themselves in interactions with Na dodecyl sulfate (II) in aqueous solution, which result in a significant change in the viscous behavior of I. Upon an increase in the concentration of  $\gamma$ -ray-irradiated I in a II solution, the decreased viscosity of I 1st increases and, upon reaching a certain concentration, C\*, decreases. The C\* values were shown to be dependent on the mol. weight of I. The phenomena observed are discussed in terms of the general theory of polymer solns., within which, C\* is treated as a critical concentration at which interpenetration of polymer mols. becomes important. Unperturbed dimensions of  $\gamma$ -ray-irradiated I **macromols.** were estimated on the basis of exptl. viscosimetric data.

CC 44-6 (Industrial Carbohydrates)  
Section cross-reference(s): 63

IT **Polyelectrolytes**  
(anionic; gamma ray-irradiated pullulan fractionation with anionic vs. **cationic** surfactants for blood plasma substitutes)

IT **9057-02-7P, Pullulan**  
RL: PNU (Preparation, unclassified); PREP (Preparation)  
(gamma ray-irradiated; gamma ray-irradiated pullulan fractionation with anionic vs. cationic surfactants for blood plasma substitutes)

IT **9057-02-7P, Pullulan**  
RL: PNU (Preparation, unclassified); PREP (Preparation)  
(gamma ray-irradiated; gamma ray-irradiated pullulan fractionation with anionic vs. cationic surfactants for blood plasma substitutes)

RN 9057-02-7 HCAPLUS

CN Pullulan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 14 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:184831 HCAPLUS

DOCUMENT NUMBER: 136:227908

TITLE: Compositions and methods for enhanced sensitivity and specificity of nucleic acid synthesis

INVENTOR(S): Astatke, Mekbib; Gebeyehu, Gulilat

PATENT ASSIGNEE(S): Invitrogen Corporation, USA

SOURCE: PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002019822	A1	20020314	WO 2001-US28042	20010910
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001090660	A5	20020322	AU 2001-90660	20010910
US 2002037834	A1	20020328	US 2001-948714	20010910
EP 1343371	A1	20030917	EP 2001-970679	20010910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004508023	T2	20040318	JP 2002-524314	20010910
PRIORITY APPLN. INFO.:			US 2000-231330P P	20000908
			WO 2001-US28042 W	20010910

AB The present invention relates to cationic and polycationic compns. and methods for enhancing synthesis of nucleic acid mols. In a preferred aspect, the invention relates to inhibition or control of nucleic acid synthesis, sequencing or amplification. Specifically, the present invention discloses cationic and polycationic mols., compds., and compns. having affinity for double-stranded and/or single-stranded nucleic acid mols. and/or single-stranded/double-stranded nucleic acid complexes (e.g., primer/template complexes, double-stranded templates, single-stranded templates or single-stranded primers) for use in such enhanced synthesis. The cationic and polycationic mols., compds., and compns. of the invention are capable of inhibiting nonspecific nucleic acid synthesis at ambient temperature. Thus, in a preferred aspect, the invention relates to "hot start" synthesis of nucleic acid mols. Accordingly, the invention prevent non-specific nucleic acid synthesis at low temps., for example during reaction set up. The invention also relates to kits for synthesizing, amplifying, reverse transcribing or sequencing nucleic acid mols. comprising one or more of the cationic and polycationic mols., compds., and compns. of the invention. The invention also relates to compns. prepared for carrying out the methods of the invention and to compns. made after or during such methods. The invention also generally relates to compns. useful for inhibiting or preventing degradation of various nucleic acid mols.

IC ICM A01N037-18

CC 3-1 (Biochemical Genetics)

ST nucleic acid synthesis amplification cation polycation kit

IT Lipids, biological studies

**Proteins**

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (cationic; compns. and methods for enhanced sensitivity and specificity  
 of nucleic acid synthesis)

IT High-mobility group proteins

Histones

Protamines

**Proteins**

cDNA

mRNA

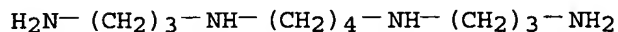
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (compns. and methods for enhanced sensitivity and specificity of

nucleic acid synthesis)

IT 71-44-3, Spermine 124-20-9, Spermidine 2462-63-7, LIPOFECTACE  
 9015-73-0 25104-18-1, Polylysine 26062-48-6,  
 Polyhistidine 28728-55-4, Polybrene 124050-77-7, Transfectam  
 128835-92-7, Lipofectin 144189-73-1, DOTAP 158571-62-1, LIPOFECTAMINE  
 189203-04-1, CELLFECTIN 189203-05-2, DMRIE-C 213252-23-4, Superfect  
 214210-13-6, FUGENE 6 246856-21-3, Effectene 343308-74-7, GenePorter  
 344612-27-7, LIPOFECTAMINE 2000  
 RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);  
 ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (comps. and methods for enhanced sensitivity and specificity of  
 nucleic acid synthesis)

IT 71-44-3, Spermine 9015-73-0 25104-18-1,  
 Polylysine  
 RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);  
 ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (comps. and methods for enhanced sensitivity and specificity of  
 nucleic acid synthesis)

RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 9015-73-0 HCAPLUS  
 CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

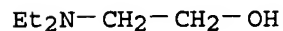
CM 1

CRN 9004-54-0  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
 CMF C6 H15 N O

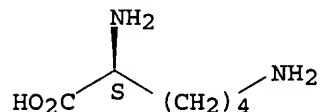


RN 25104-18-1 HCAPLUS  
 CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1  
 CMF C6 H14 N2 O2

Absolute stereochemistry.



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 15 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2002:107189 HCAPLUS  
 DOCUMENT NUMBER: 136:172828  
 TITLE: Bioabsorbable composites of derivatized hyaluronic acid  
 INVENTOR(S): Sadozai, Khalid K.; Kuo, Jing-Wen; Sherwood, Charles H.  
 PATENT ASSIGNEE(S): Anika Therapeutics, Inc., USA  
 SOURCE: PCT Int. Appl., 52 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002009792	A1	20020207	WO 2001-US40794	20010522
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002071855	A1	20020613	US 2001-863029	20010522
US 6548081	B2	20030415		
EP 1305064	A1	20030502	EP 2001-939935	20010522
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.: US 2000-222116P P 20000728  
 WO 2001-US40794 W 20010522

OTHER SOURCE(S): MARPAT 136:172828

AB The present invention relates to a composite and a method for reducing post-operative adhesion of tissues. The composite includes a biocompatible, **biodegradable** support, and a water-insol. hyaluronic acid derivative at the support. The hyaluronic acid derivative includes an N-acylurea that results from crosslinking by the reaction of hyaluronic acid with a multifunctional carbodiimide. Optionally, a monocarbodiimide also may be employed. A pharmaceutically-active mol. may be added to the N-acylurea derivative of hyaluronic acid. Although the composite includes material that prevents adhesion between tissues, in order to reduce the need for suturing when the composite is being used during a surgical procedure, a material that enhances adhesion of the composite to tissues may be applied to a surface of the composite. A method of forming the composite for reducing post-operative adhesion of tissues, including the step of applying an N-acylurea derivative of hyaluronic acid resulting from crosslinking with a multifunctional carbodiimide, to a biocompatible, **biodegradable** support; a method of preparing a drug delivery vehicle that includes a pharmaceutically-active mol. with the N-acylurea derivative of hyaluronic acid resulting from crosslinking with a multifunctional carbodiimide; and a method of reducing post-operative adhesion of tissues are disclosed. A biscarbodiimide, p-phenylenebis(ethylcarbodiimide), and HA were reacted at a molar equiv

ratio of 16.7% to yield a water-insol. gel. This gel was poured into an 8 cm x 8 cm mold under aseptic conditions. The mold containing the crosslinked HA gel was frozen at -45° and then freeze-dried for 24 h under vacuum of <10 mm. The freeze-dried sponge was compressed under aseptic conditions and cut into 4 cm x 4 cm pieces. These sponges were put in sterile pouches and sealed to keep them sterile.

- IC ICM A61L031-12  
ICS A61L031-14; A61L031-10; A61K047-36; C08B037-00
- CC 63-7 (Pharmaceuticals)  
Section cross-reference(s): 33
- IT Biopolymers  
Caseins, biological studies  
Collagens, biological studies  
Enzymes, biological studies  
Fibrins  
Gelatins, biological studies  
Growth factors, animal  
Keratins  
Myosins  
Peptides, biological studies  
Polyamides, biological studies  
Polyethers, biological studies  
Polyoxyalkylenes, biological studies  
Polyphosphazenes  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(bioabsorbable composites of derivatized hyaluronic acid)
- IT 144-62-7D, Oxalic acid, polymers containing 538-75-0D, reaction products with hyaluronic acid 2491-17-0D, reaction products with hyaluronic acid 9002-89-5, Poly(vinyl alcohol) 9003-01-4, Poly(acrylic acid) 9003-39-8, PVP 9004-34-6, Cellulose, biological studies 9004-34-6D, Cellulose, derivs. 9004-61-9D, Hyaluronic acid, derivs. 9012-76-4, Chitosan 9012-76-4D, Chitosan, derivs. 22572-40-3D, reaction products with hyaluronic acid 24980-41-4, Polycaprolactone 24991-23-9 25038-54-4, Nylon 6, biological studies 25248-42-4, Polycaprolactone 25322-68-3, Polyethylene glycol 25513-46-6, Polyglutamic acid 25608-40-6, Poly(L-aspartic acid) 25734-27-4, Nylon 2 25736-32-7, DL-Glutamic acid homopolymer, SRU 25952-53-8D, reaction products with hyaluronic acid 26009-03-0, Poly(glycolic acid) 26009-03-0D, Polyglycolide, derivs. 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26023-30-3D, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)], derivs. 26063-13-8, Poly(L-aspartic acid) 26100-51-6, Poly(lactic acid) 26124-68-5, Poly(glycolic acid) 26202-08-4D, Polyglycolide, derivs. 26680-10-4D, Polylactide, derivs. 27881-01-2, Poly(D-aspartic acid) 27881-03-4, Poly(DL-aspartic acid) 27940-72-3, Poly(D-aspartic acid), SRU 27940-74-5, Poly(DL-aspartic acid), SRU 28728-97-4, Poly(hydroxybutyric acid), SRU 34346-01-5, Glycolic acid-lactic acid copolymer 49717-32-0, DL-Glutamic acid homopolymer 56549-52-1, Poly(butylene diglycolate) 90409-78-2, 1,3-Bis(p-carboxyphenoxy)propane-sebacic acid copolymer 99896-85-2D, polymers containing 114959-05-6, Poly(4-hydroxybutyric acid) 134736-12-2D, reaction products with hyaluronic acid 146878-66-2D, Polydihydropyran, derivs. 396077-51-3D, reaction products with hyaluronic acid 396077-52-4D, reaction products with hyaluronic acid 396077-53-5D, reaction products with hyaluronic acid 396077-55-7D, reaction products with hyaluronic acid 396077-56-8D, reaction products with hyaluronic acid 396077-57-9D, reaction products with hyaluronic acid 396077-58-0D, reaction products with hyaluronic acid 396131-99-0D, reaction products with hyaluronic acid



acid

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(bioabsorbable composites of derivatized hyaluronic acid)

IT 9005-32-7D, Alginic acid, salts

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(crosslinked; bioabsorbable composites of derivatized hyaluronic acid)IT 9004-34-6, Cellulose, biological studies 9004-34-6D,  
Cellulose, derivs. 9004-61-9D, Hyaluronic acid, derivs.  
9012-76-4, Chitosan 9012-76-4D, Chitosan, derivs.

24991-23-9 25513-46-6, Polyglutamic acid

25608-40-6, Poly(L-aspartic acid) 26063-13-8,  
Poly(L-aspartic acid) 99896-85-2D, polymers containing

134736-12-2D, reaction products with hyaluronic acid

396077-51-3D, reaction products with hyaluronic acid

396077-52-4D, reaction products with hyaluronic acid

396077-53-5D, reaction products with hyaluronic acid

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(bioabsorbable composites of derivatized hyaluronic acid)

RN 9004-34-6 HCAPLUS

CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-34-6 HCAPLUS

CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-61-9 HCAPLUS

CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

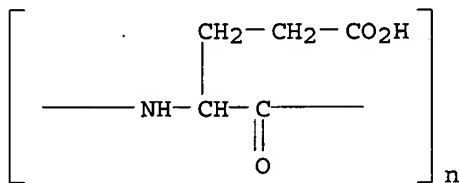
RN 9012-76-4 HCAPLUS

CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 24991-23-9 HCAPLUS

CN Poly[imino[(1S)-1-(2-carboxyethyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



RN 25513-46-6 HCAPLUS

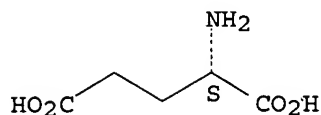
CN L-Glutamic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-86-0

CMF C5 H9 N O4

Absolute stereochemistry.

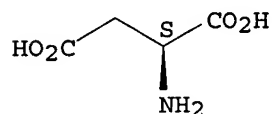


RN 25608-40-6 HCAPLUS  
CN L-Aspartic acid, homopolymer (9CI) (CA INDEX NAME)

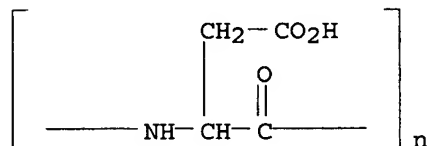
CM 1

CRN 56-84-8  
CMF C4 H7 N O4

Absolute stereochemistry. Rotation (+).

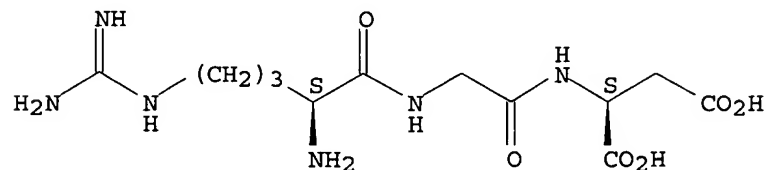


RN 26063-13-8 HCAPLUS  
CN Poly[imino[(1S)-1-(carboxymethyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

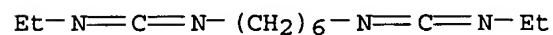


RN 99896-85-2 HCAPLUS  
CN L-Aspartic acid, L-arginylglycyl- (9CI) (CA INDEX NAME)

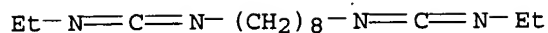
Absolute stereochemistry. Rotation (+).



RN 134736-12-2 HCAPLUS  
CN 1,6-Hexanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)

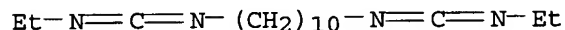


RN 396077-51-3 HCAPLUS  
CN 1,8-Octanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



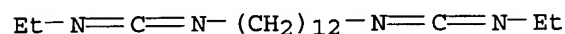
RN 396077-52-4 HCAPLUS

CN 1,10-Decanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



RN 396077-53-5 HCAPLUS

CN 1,12-Dodecanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



IT 9005-32-7D, Alginic acid, salts

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(crosslinked; bioabsorbable composites of derivatized hyaluronic acid)

RN 9005-32-7 HCAPLUS

CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 16 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:444889 HCAPLUS

DOCUMENT NUMBER: 136:107410

TITLE: Microencapsulation by coacervation in the system  
anionic polyelectrolyte-cationic surfactantAUTHOR(S): Sovilj, Verica J.; Dokic, Petar P.; Mesinkovska, Duska  
J.CORPORATE SOURCE: Tehnoloski fak., Univ. u Novom Sadu, Novi Sad, 21000,  
YugoslaviaSOURCE: Acta Periodica Technologica (2000), 31(Pt. B), 453-459  
CODEN: APTEFF; ISSN: 1450-7188

PUBLISHER: University of Novi Sad, Faculty of Technology

DOCUMENT TYPE: Journal

LANGUAGE: Serbian

AB When a substance is dispersed in macromol. solution, which is a medium possessing ability for coacervation, the dispersed particles are surrounded by the coacervate layer which may lead to protecting layer formation, i.e. microcapsules formation. Coacervation method of microencapsulation is widely used in food and pharmaceutical industry. Polyelectrolyte and oppositely charged surfactant interaction in solution can form the coacervates. In this work, conditions for stable coacervate formation of anionic polyelectrolyte sodium CM-cellulose (NaKMC) and mixed micelles of cationic surfactant cetyltrimethylammonium bromide and nonionic surfactant polyoxyethylene sorbitan monooleate surfactant (PAM) in the presence of NaCl are examined Encapsulation of paraffin oil in this system was carried out. It has been shown that stable microcapsules were obtained in 1.2% NaCl at definite mass ratio of mixed micelle PAM/NaKMC. The composition and the micelle formation had the effect as well.

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 17

IT **Polyelectrolytes**  
 (anionic; microencapsulation by coacervation in the system anionic polyelectrolyte-cationic surfactant)  
 IT 57-09-0, Cetyltrimethylammonium bromide 9004-32-4, Sodium CM-cellulose 9005-65-6, Polyoxyethylene sorbitan monooleate  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (microencapsulation by coacervation in the system anionic polyelectrolyte-cationic surfactant)  
 IT 9004-32-4, Sodium CM-cellulose  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (microencapsulation by coacervation in the system anionic polyelectrolyte-cationic surfactant)  
 RN 9004-32-4 HCAPLUS  
 CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

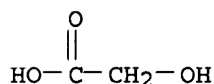
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
 CMF C2 H4 O3



L39 ANSWER 17 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2001:111305 HCAPLUS  
 DOCUMENT NUMBER: 134:163843  
 TITLE: Polymerization of monomers having ethylenic double bonds while inhibiting scale formation  
 INVENTOR(S): Shimizu, Toshihide; Watanabe, Mikio; Fujimoto, Tatsuya; Noguki, Genji  
 PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001040005	A2	20010213	JP 1999-215556	19990729
PRIORITY APPLN. INFO.:			JP 1999-215556	19990729

AB The polymerization reactors have inner-wall coatings which are prepared by applying coatings containing water-soluble anionic macromols. and cationic organic compds. while using water vapor as carriers. Thus, an aqueous solution containing

100:30 (%) poly(acrylic acid)/polyethyleneimine mixture was applied on the inner wall of a polymerization reactor while introducing water vapor as coating carriers to give a thin coating which prevented scales from adhering to the reactor walls effectively in 50-batch polymns. of vinyl chloride monomers. The resulted polymers had little fisheyes.

IC ICM C08F002-00

ICS C08F014-06

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 42

IT **Polyelectrolytes**

(cationic, scale-preventive coatings; polymerization of ethylenic monomers in reactors with scale-preventive coatings prepared by use of water vapor carriers)

IT 157-07-3 989-38-8, C.I. Basic Red 1 4569-88-4, C.I. Basic Blue 16  
8005-02-5, C.I. Solvent Black 7 9000-69-5, Pectin 9002-98-6  
9003-01-4, Acrylic acid homopolymer 9003-05-8D, Polyacrylamide, partial  
Mannich reaction products 9003-47-8, Polyvinylpyridine 9004-32-4  
, Carboxymethyl cellulose 9004-32-4, Carboxymethyl cellulose  
9004-61-9, Hyaluronic acid 9011-07-8, Maleic anhydride-vinyl  
acetate copolymer 9012-76-4, Chitosan 9032-43-3, Cellulose  
sulfate 11138-66-2, Xanthan gum 25067-59-8, Poly(vinyl  
carbazole) 25087-26-7, Methacrylic acid homopolymer 25751-21-7,  
Acrylic acid-methacrylic acid copolymer 26336-38-9, Polyvinylamine  
26426-80-2, Isobutylene-maleic anhydride copolymer 26837-42-3  
27100-68-1, Maleic anhydride-vinyl ether copolymer 28574-59-6,  
Poly(dimethylaminoethyl acrylate) 30921-92-7, Poly(vinyl imidazoline)  
35164-11-5, Acrylamide-vinylsulfonic acid copolymer 50851-57-5,  
Styrenesulfonic acid homopolymer 113755-30-9, Polygalactosamine  
222540-65-0, Hepalin

RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered  
material use); RACT (Reactant or reagent); USES (Uses)

(scale-preventive coatings; polymerization of ethylenic monomers in reactors  
with scale-preventive coatings prepared by use of water vapor carriers)

IT 1398-61-4, Chitin

RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered  
material use); RACT (Reactant or reagent); USES (Uses)

(water-soluble, scale-preventive coatings; polymerization of ethylenic

monomers

in reactors with scale-preventive coatings prepared by use of water vapor  
carriers)

IT 9000-69-5, Pectin 9004-32-4, Carboxymethyl cellulose

9004-61-9, Hyaluronic acid 9012-76-4, Chitosan

11138-66-2, Xanthan gum

RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered  
material use); RACT (Reactant or reagent); USES (Uses)

(scale-preventive coatings; polymerization of ethylenic monomers in reactors  
with scale-preventive coatings prepared by use of water vapor carriers)

RN 9000-69-5 HCAPLUS

CN Pectin (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-32-4 HCAPLUS

CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

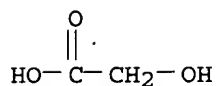
CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
CMF C2 H4 O3



RN 9004-61-9 HCAPLUS  
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS  
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 11138-66-2 HCAPLUS  
CN Xanthan gum (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 1398-61-4, Chitin  
RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
(water-soluble, scale-preventive coatings; polymerization of ethylenic monomers  
in reactors with scale-preventive coatings prepared by use of water vapor carriers)  
RN 1398-61-4 HCAPLUS  
CN Chitin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 18 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2001:78427 HCAPLUS  
DOCUMENT NUMBER: 134:152626  
TITLE: A **biodegradable polycation**  
composition for delivery of an anionic  
**macromolecule** in gene therapy  
INVENTOR(S): Domb, Abraham J.  
PATENT ASSIGNEE(S): Polygene Ltd., Israel  
SOURCE: PCT Int. Appl., 66 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO..	KIND	DATE	APPLICATION NO.	DATE
WO 2001007486	A1	20010201	WO 2000-IL420	20000718
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,				

LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
 SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,  
 ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1200481 A1 20020502 EP 2000-946249 20000718

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003505473 T2 20030212 JP 2001-512568 20000718

PRIORITY APPLN. INFO.: IL 1999-131074 A 19990723  
 WO 2000-IL420 W 20000718

AB The present invention provides a **biodegradable polycation** composition for delivery of an anionic **macromol.**, comprising a polysaccharide chain having an amount of saccharide units ranging from 2 to 2000 and at least one grafted **oligoamine** per 5 saccharide units, wherein said **oligoamine** is selected from the group consisting of a linear, branched and cyclic alkyl amine having at least two amino groups, examples of said anionic **macromols.** are plasmid, an oligonucleotide, an **antisense**, a peptide, a protein, a polysaccharide and combinations thereof, and said polysaccharide chains are selected from the group consisting of dextrans, arabinogalactan, pullulan, cellulose, cellobiose, inulin, chitosan, alginates and hyaluronic acid.

IC ICM C08B037-00  
 ICS A61K047-36; A61K048-00

CC 63-5 (Pharmaceuticals)  
 Section cross-reference(s): 33, 44

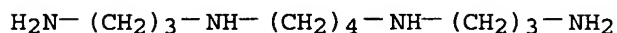
ST gene therapy polysaccharide polyamine graft anionic **macromol** delivery; **biodegradable polycation** gene therapy anionic **macromol** delivery; **oligoamine** graft polysaccharide gene therapy **biodegradable polycation**; plasmid delivery gene therapy **biodegradable polycation**; oligonucleotide delivery gene therapy **biodegradable polycation**; **antisense** delivery gene therapy **biodegradable polycation**; peptide delivery gene therapy **biodegradable polycation**; protein delivery gene therapy **biodegradable polycation**; dextran graft **biodegradable polycation** gene therapy; chitosan graft **biodegradable polycation** gene therapy; alginate graft **biodegradable polycation** gene therapy; hyaluronic acid graft **biodegradable polycation** gene therapy; arabinogalactan graft **biodegradable polycation** gene therapy; **polycation** gene therapy; pullulan graft **biodegradable polycation** gene therapy; cellobiose graft **biodegradable polycation** gene therapy; inulin graft **biodegradable polycation** gene therapy

IT **Biodegradable materials**  
 Gene therapy  
 (a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)

IT **Polysaccharides, biological studies**  
 RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (conjugates; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)

IT **Polysaccharides, biological studies**  
 RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

- (polyamine-grafted; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- IT 71-44-3DP, Spermine, grafted products with oxidized polysaccharides 124-20-9DP, Spermidine, grafted products with oxidized polysaccharides 9002-98-6DP, grafted products with oxidized polysaccharides 9004-54-0DP, Dextran, oxidized, **oligoamine** grafted products, biological studies 9036-66-2DP, Arabinogalactan, oxidized, **oligoamine** grafted products 9057-02-7DP, Pullulan, oxidized, **oligoamine** grafted products 103493-12-5DP, conjugation products with tosylated polysaccharides 168788-09-8DP, conjugation products with tosylated polysaccharides 202145-88-8DP, conjugation products with tosylated polysaccharides 322728-31-4DP, grafted products with **oligoamine** and Spermine  
 RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- IT 104-15-4, p-Toluenesulfonic acid, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (linking agent; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- IT 288-32-4, Imidazole, reactions 383-63-1, Ethyl trifluoroacetate 501-53-1, Benzyl chloroformate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant for terminating agent; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- IT 71-44-3, Spermine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- IT 22129-07-3P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (terminating agent; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- IT 71-44-3DP, Spermine, grafted products with oxidized polysaccharides 9004-54-0DP, Dextran, oxidized, **oligoamine** grafted products, biological studies 9036-66-2DP, Arabinogalactan, oxidized, **oligoamine** grafted products 9057-02-7DP, Pullulan, oxidized, **oligoamine** grafted products 168788-09-8DP, conjugation products with tosylated polysaccharides 202145-88-8DP, conjugation products with tosylated polysaccharides  
 RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)
- RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 9004-54-0 HCAPLUS  
 CN Dextran (9CI) (CA INDEX NAME)



\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

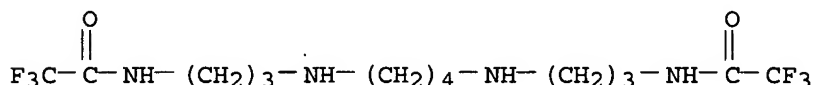
RN 9036-66-2 HCAPLUS  
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

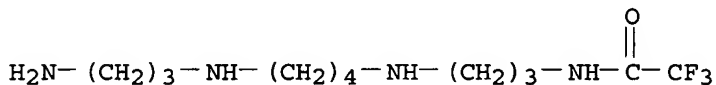
RN 9057-02-7 HCAPLUS  
CN Pullulan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

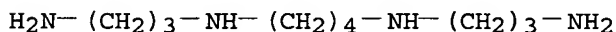
RN 168788-09-8 HCAPLUS  
CN Acetamide, N,N'-[1,4-butanediylbis(imino-3,1-propanediyl)]bis[2,2,2-trifluoro- (9CI) (CA INDEX NAME)



RN 202145-88-8 HCAPLUS  
CN Acetamide, N-[3-[[4-[(3-aminopropyl)amino]butyl]amino]propyl]-2,2,2-trifluoro- (9CI) (CA INDEX NAME)



IT 71-44-3, Spermine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant; a **biodegradable polycation** composition for delivery of anionic **macromol.** in gene therapy)  
RN 71-44-3 HCAPLUS  
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 19 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2000:608645 HCAPLUS  
DOCUMENT NUMBER: 133:205059  
TITLE: Positively charged microporous membrane  
INVENTOR(S): Wu, Xiaosong; Hou, Chung-Jen; Dharia, Jayesh; Konstantin, Peter; Yang, Yujing  
PATENT ASSIGNEE(S): Pall Corporation, USA  
SOURCE: PCT Int. Appl., 48 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2000050161 A1 20000831 WO 2000-US4786 20000225  
 W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,  
 CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,  
 IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
 MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
 SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,  
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 EP 1163045 A1 20011219 EP 2000-915864 20000225  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 JP 2002537106 T2 20021105 JP 2000-600766 20000225

PRIORITY APPLN. INFO.:

US 1999-121669P P 19990225  
 US 1999-121670P P 19990225  
 WO 2000-US4786 W 20000225

AB The present invention provides a pos. charged microporous membrane having a protein binding capacity of about 25 mg/mL or greater comprising a hydrophilic porous substrate and a crosslinked coating that provides a fixed pos. charge to the membrane. The present invention further provides a pos. charged microporous membrane comprising porous substrate and a crosslinked coating comprising pendent cationic groups. The membranes of the present invention find use in a variety of applications including ion-exchange chromatog., macromol. transfer, as well as detection, filtration and purification of biomols. such as proteins, nucleic acids, endotoxins, and the like. A diallylamine copolymer was prepared, activated with epichlorohydrin and crosslinked with pentaethylenehexamine and glycidyl trimethylammonium chloride on microporous polyethersulfone membranes. The membranes bound bovine serum albumin.

IC ICM B01D067-00

ICS B01D061-14; B01D071-56

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 3, 4, 35, 48

IT Immunoglobulins

**Proteins, general, analysis**

RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process)

(binding capacity for; pos. charged microporous membrane)

IT Amino acids, preparation

**Peptides, preparation**

**Proteins, specific or class**

RL: PUR (Purification or recovery); PREP (Preparation)

(neg.-charged; pos. charged microporous membrane)

IT Transfers

(of macromols.; pos. charged microporous membrane)

IT Macromolecular compounds

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(transfer of; pos. charged microporous membrane)

IT 124-02-7D, Diallylamine, copolymers, crosslinked 4067-16-7D, Pentaethylenehexamine, acrylic copolymers, crosslinked 9002-98-6D, crosslinked

RL: DEV (Device component use); USES (Uses)

(as coating; pos. charged microporous membrane)

IT 9003-53-6D, Polystyrene, compds. 9004-34-6D, Cellulose, polymers, uses 9004-35-7D, Cellulose acetate, compds. 9004-70-0D, Cellulose nitrate, compds.

RL: DEV (Device component use); USES (Uses)

(as porous substrate; pos. charged microporous membrane)

IT 106-89-8DP, Epichlorohydrin, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer  
 2224-15-9DP, Ethylene glycol diglycidyl ether, reaction product with (3-chloro-2-hydroxypropyl) trimethylammonium chloride and aziridine homopolymer (polyethylenimine) 2224-15-9DP, Ethylene glycol diglycidyl ether, reaction product with polyethylenimine and glycidyl trimethylammonium chloride 3033-77-0DP, Glycidyltrimethylammonium chloride, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer 3033-77-0DP, Glycidyl trimethylammonium chloride, reaction product with polyethylenimine and butylene glycol diglycidyl ether 3327-22-8DP, (3-Chloro-2-hydroxypropyl) trimethylammonium chloride, reaction product with ethylene glycol diglycidyl ether and aziridine homopolymer (polyethylenimine)  
 4067-16-7DP, Pentaethylenhexamine, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer 9002-98-6DP, Aziridine, homopolymer, reaction product with (3-chloro-2-hydroxypropyl) trimethylammonium chloride and ethylene glycol diglycidyl ether 9002-98-6DP, Aziridine, homopolymer, reaction product with glycidyl trimethylammonium chloride and butylene glycol diglycidyl ether 28065-38-5DP, Butylene glycol diglycidyl ether, reaction product with polyethylenimine and glycidyl trimethylammonium chloride 28065-38-5DP, Butylene glycol diglycidyl ether, reaction product with polyethylenimine and glycidyl trimethylammonium chloride 105689-90-5DP, reaction product with ethylene glycol diglycidyl ether

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(pos. charged microporous membrane)

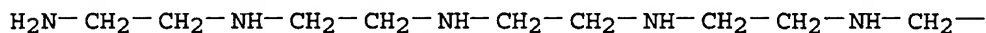
IT 2224-15-9DP, Ethylene glycol diglycidyl ether, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 3033-77-0DP, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 3033-77-0DP, reaction product with glycidyl methacrylate-dimethylformamide-methacryloyloxyethyl trimethylammonium chloride copolymer 4067-16-7DP, Pentaethylenhexamine, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 4067-16-7DP, Pentaethylenhexamine, reaction product with glycidyl methacrylate-dimethylformamide-methacryloyloxyethyl trimethylammonium chloride copolymer 9002-98-6DP, Aziridine, homopolymer, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 290307-86-7DP, Diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer, reaction product with epichlorohydrin 290307-87-8DP, reaction product with epichlorohydrin 290307-88-9P 290307-89-0P, Glycidyl methacrylate-dimethylformamide-methacryloyloxyethyl trimethylammonium chloride copolymer 290307-90-3P, Glycidyl methacrylate-methacryloylaminopropyl trimethylammonium chloride-pentaethylenhexamine-glycidyl trimethylammonium chloride copolymer

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

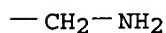
(pos. charged microporous membrane)

IT 4067-16-7D, Pentaethylenehexamine, acrylic copolymers, crosslinked  
 RL: DEV (Device component use); USES (Uses)  
 (as coating; pos. charged microporous membrane)  
 RN 4067-16-7 HCAPLUS  
 CN 3,6,9,12-Tetraazatetradecane-1,14-diamine (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IT 9004-34-6D, Cellulose, polymers, uses 9004-35-7D,  
 Cellulose acetate, compds. 9004-70-0D, Cellulose nitrate,  
 compds.  
 RL: DEV (Device component use); USES (Uses)  
 (as porous substrate; pos. charged microporous membrane)  
 RN 9004-34-6 HCAPLUS  
 CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 RN 9004-35-7 HCAPLUS  
 CN Cellulose, acetate (9CI) (CA INDEX NAME)

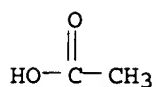
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 64-19-7  
 CMF C2 H4 O2



RN 9004-70-0 HCAPLUS  
 CN Cellulose, nitrate (9CI) (CA INDEX NAME)

CM 1

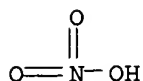
CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

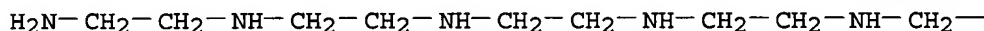
CRN 7697-37-2

CMF H N O3

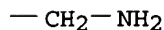


IT 4067-16-7DP, Pentaethylenehexamine, reaction product with  
diallylamine-diallyldimethylammonium chloride-N-[3-  
(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylamm  
onium chloride copolymer  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(pos. charged microporous membrane)  
RN 4067-16-7 HCAPLUS  
CN 3,6,9,12-Tetraazatetradecane-1,14-diamine (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(pos. charged microporous membrane)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 20 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:513547 HCAPLUS

DOCUMENT NUMBER: 133:125280

TITLE: Compositions and methods for controlled delivery of  
virus vectors

INVENTOR(S): Levy, Robert J.; Jones, Peter L.

PATENT ASSIGNEE(S): Children's Hospital of Philadelphia, USA

SOURCE: PCT Int. Appl., 87 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000043044	A1	20000727	WO 2000-US1193	20000119
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,				

IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
 MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
 SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,  
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-116405P P 19990119

- AB The invention relates to compns. and methods for delivering a virus vector to an animal. The compns. include compns. which comprise a matrix having a virus vector bound at the exterior surface thereof in a physiol. reversible manner. The invention also includes methods of making such compns., including particles, devices, bulk materials, and other objects which comprise, consist of, or are coated with such compns. Methods of delivering a virus vector to an animal tissue are also described.
- IC ICM A61K048-00  
 ICS C12N015-63; A61B019-00; C07H021-04
- CC 63-5 (Pharmaceuticals)  
 Section cross-reference(s): 3
- IT Matrix media  
 (biodegradable; compns. and methods for controlled delivery of virus vectors)
- IT **Proteins, specific or class**  
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
 (coat; compns. and methods for controlled delivery of virus vectors)
- IT **Peptides, biological studies**  
 RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (oligopeptides, virus-binding  $\alpha$ -helical; compns. and methods for controlled delivery of virus vectors)
- IT **Antisense oligonucleotides**  
 Ribozymes  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (transfection indicators; compns. and methods for controlled delivery of virus vectors)
- IT **Proteins, specific or class**  
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
 (virus-binding; compns. and methods for controlled delivery of virus vectors)
- IT **Glycopeptides**  
 Histones  
 Myelin basic protein  
 Polyamides, biological studies  
 Prolamins  
 RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (virus-binding; compns. and methods for controlled delivery of virus vectors)
- IT 97-90-5, Ethylene glycol dimethacrylate 108-05-4D, Vinyl acetate, copolymers 1306-06-5, Hydroxyapatite 6606-65-1 7440-06-4, Platinum, biological studies 7440-32-6, Titanium, biological studies 7758-87-4, Tricalcium phosphate 9002-84-0, Polytetrafluoroethylene 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-18-3 9003-20-7, Vinyl acetate homopolymer

9003-27-4, Polyisobutylene 9003-31-0, Polyisoprene 9003-39-8,  
 Polyvinylpyrrolidone 9003-53-6, Polystyrene 9003-54-7, PolyStyrene  
 acrylonitrile 9003-56-9 9004-35-7, Cellulose acetate  
 9004-53-9, Dextrin 9004-54-0, Dextran, biological studies  
 9005-32-7, Alginic acid 9011-14-7, Polymethylmethacrylate  
 9012-36-6, Agarose 9016-80-2, Polymethylpentene 9017-21-4,  
 Polymethylstyrene 9046-31-5, Polystyrene carboxylic acid 10586-17-1,  
 Isopropyl cyanoacrylate 12597-68-1, Stainless steel, biological studies  
 15802-18-3D, polyalkyl derivs. 21982-30-9, Hydroxymethyl methacrylate  
 24937-78-8, Ethylene vinyl acetate copolymer 24980-41-4,  
 Polycaprolactone 24981-14-4, Polyvinyl fluoride 25014-41-9,  
 Polyacrylonitrile 25068-26-2, Polymethylpentene 25087-26-7,  
 Polymethacrylic acid 25102-52-7, Butadiene-isoprene copolymer  
 25248-42-4, Polycaprolactone 26009-03-0, Polyglycolic acid 26023-30-3,  
 Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Polylactic acid  
 26124-68-5, Polyglycolic acid 34346-01-5, Glycolic acid-lactic acid  
 copolymer 50851-57-5, Polystyrene sulfonic acid 61128-18-5,  
 Caprolactone glycolic acid copolymer

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
 use); BIOL (Biological study); PROC (Process); USES (Uses)

(controlled-delivery matrix; compns. and methods for controlled  
 delivery of virus vectors)

IT 71-44-3, Spermine 100-97-0, Hexamine, biological studies  
 110-60-1, Putrescine 124-20-9, Spermidine 462-94-2, Cadaverine  
 9002-98-6, Polyethylenimine 24937-47-1, Polyarginine  
 24937-49-3, Polyornithine 25104-12-5, Polyornithine 25104-18-1  
 , Polylysine 25212-18-4, Polyarginine 26062-48-6,  
 Polyhistidine 26854-81-9, Polyhistidine 26913-06-4, Polyethylenimine  
 28728-55-4, Polybrene 38000-06-5, Polylysine  
 RL: BPR (Biological process); BSU (Biological study, unclassified); PEP  
 (Physical, engineering or chemical process); THU (Therapeutic use); BIOL  
 (Biological study); PROC (Process); USES (Uses)  
 (virus-binding; compns. and methods for controlled delivery of virus  
 vectors)

IT 9004-35-7, Cellulose acetate 9004-54-0, Dextran,  
 biological studies 9005-32-7, Alginic acid  
 RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
 use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (controlled-delivery matrix; compns. and methods for controlled  
 delivery of virus vectors)

RN 9004-35-7 HCAPLUS

CN Cellulose, acetate (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

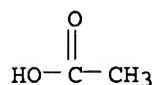
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 64-19-7

CMF C2 H4 O2



RN 9004-54-0 HCAPLUS  
CN Dextran (9CI) (CA INDEX NAME)

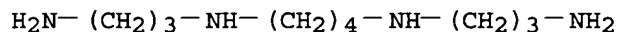
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9005-32-7 HCAPLUS  
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

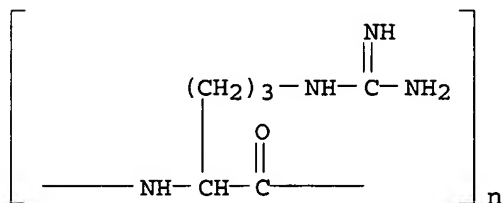
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 71-44-3, Spermine 24937-47-1, Polyarginine  
25104-18-1, Polylysine 25212-18-4, Polyarginine  
38000-06-5, Polylysine  
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP  
(Physical, engineering or chemical process); THU (Therapeutic use); BIOL  
(Biological study); PROC (Process); USES (Uses)  
(virus-binding; compns. and methods for controlled delivery of virus  
vectors)

RN 71-44-3 HCAPLUS  
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 24937-47-1 HCAPLUS  
CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

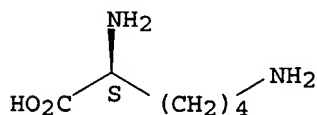


RN 25104-18-1 HCAPLUS  
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1  
CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 25212-18-4 HCAPLUS



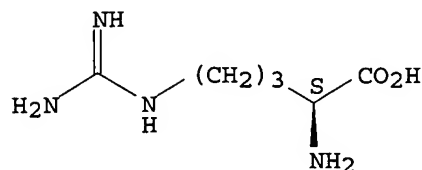
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-79-3

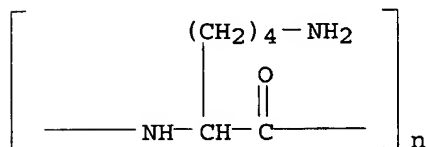
CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS

CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 21 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:493425 HCAPLUS

DOCUMENT NUMBER: 133:109939

TITLE: Hydrogel compositions for controlled delivery of virus vectors and methods of use thereof

INVENTOR(S): Levy, Robert J.; Crombleholme, Timothy; Vyavahare, Narendra

PATENT ASSIGNEE(S): The Children's Hospital of Philadelphia, USA

SOURCE: PCT Int. Appl., 97 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000041732	A1	20000720	WO 2000-US1194	20000119
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

US 6333194            B1    20011225            US 2000-487854    20000119  
 PRIORITY APPLN. INFO.:            US 1999-116538P   P   19990119

AB    The invention relates to compns. and methods for delivering a virus vector to an animal. The compns. include compns. which comprise a hydrogel matrix (e.g. a collagen matrix which can comprise a poloxamer or an alginate) containing a virus vector therein in a transfectious form. The invention also includes methods of making such hydrogel precursor mixts. and hydrogel matrixes, including particles, devices, bulk materials, and other objects which comprise, consist of, or are coated with such mixts. or matrixes. The invention further relates to compns. comprising a hydrogel precursor mixture having a virus vector suspended therein, which, when administered to an animal, gel to form a hydrogel matrix containing a virus vector therein in a transfectious form. Methods of delivering a virus vector to an animal tissue are also described.

IC    ICM   A61K051-00  
       ICS   A61M036-14; C07H021-02; C07H021-04; C12Q001-68; C12P021-06;  
           C12N015-00

CC    63-5 (Pharmaceuticals)  
       Section cross-reference(s): 3, 15

IT    **Proteins, specific or class**  
       RL: BSU (Biological study, unclassified); BIOL (Biological study)  
           (-ligand pairs; hydrogel compns. for controlled delivery of virus  
           vectors and methods of use thereof)

IT    **Antisense oligonucleotides**  
       RL: BPR (Biological process); BSU (Biological study, unclassified); THU  
           (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
           (antirestenotic; hydrogel compns. for controlled delivery of virus  
           vectors and methods of use thereof)

IT    Polymers, biological studies  
       RL: BPR (Biological process); BSU (Biological study, unclassified); THU  
           (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
           (biodegradable; hydrogel compns. for controlled delivery of  
           virus vectors and methods of use thereof)

IT    **Glycopeptides**  
       RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
           use); BIOL (Biological study); PROC (Process); USES (Uses)  
           (low-mol.-weight; hydrogel compns. for controlled delivery of virus  
           vectors and methods of use thereof)

IT    **Peptides, biological studies**  
       RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
           use); BIOL (Biological study); PROC (Process); USES (Uses)  
           (oligopeptides,  $\alpha$ -helical; hydrogel compns. for controlled  
           delivery of virus vectors and methods of use thereof)

IT    **Proteins, specific or class**  
       RL: BPR (Biological process); BSU (Biological study, unclassified); THU  
           (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
           (viral coat; hydrogel compns. for controlled delivery of virus vectors  
           and methods of use thereof)

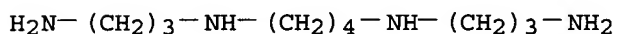
IT    71-44-3, Spermine    100-97-0, Hexamine, biological studies  
       110-60-1, Putrescine    124-20-9, Spermidine    462-94-2, Cadaverine  
       9002-98-6, Polyethylenimine    26913-06-4, Polyethylenimine    28728-55-4,  
       Polybrene  
       RL: BSU (Biological study, unclassified); PEP (Physical, engineering or  
           chemical process); THU (Therapeutic use); BIOL (Biological study); PROC  
           (Process); USES (Uses)  
           (hydrogel compns. for controlled delivery of virus vectors and methods  
           of use thereof)

IT    9005-32-7D, Alginic acid, derivs. 24937-47-1,  
       Polyarginine    24937-49-3, Polyornithine    25104-12-5, Polyornithine

25104-18-1, Polylysine 25212-18-4, Polyarginine  
 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine 38000-06-5  
 , Polylysine 106392-12-5, Poloxamer  
 RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
 use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (hydrogel compns. for controlled delivery of virus vectors and methods  
 of use thereof)

IT 71-44-3, Spermine  
 RL: BSU (Biological study, unclassified); PEP (Physical, engineering or  
 chemical process); THU (Therapeutic use); BIOL (Biological study); PROC  
 (Process); USES (Uses)  
 (hydrogel compns. for controlled delivery of virus vectors and methods  
 of use thereof)

RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

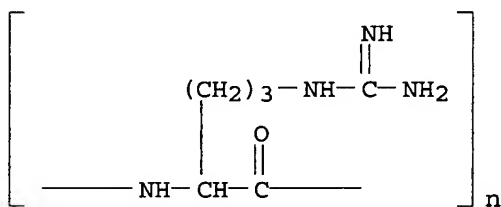


IT 9005-32-7D, Alginic acid, derivs. 24937-47-1,  
 Polyarginine 25104-18-1, Polylysine 25212-18-4,  
 Polyarginine 38000-06-5, Polylysine  
 RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
 use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (hydrogel compns. for controlled delivery of virus vectors and methods  
 of use thereof)

RN 9005-32-7 HCAPLUS  
 CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 24937-47-1 HCAPLUS  
 CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-  
 ethanediyl]] (9CI) (CA INDEX NAME)



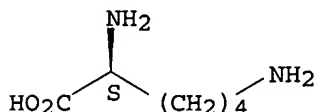
RN 25104-18-1 HCAPLUS  
 CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1

CMF C6 H14 N2 O2

Absolute stereochemistry.

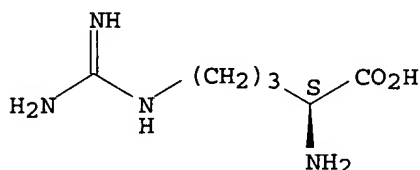


RN 25212-18-4 HCAPLUS  
 CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

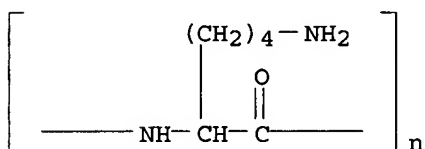
CM 1

CRN 74-79-3  
 CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS  
 CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 22 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2000:493334 HCAPLUS  
 DOCUMENT NUMBER: 133:125276  
 TITLE: Sustained delivery of polyionic bioactive agents  
 INVENTOR(S): Levy, Robert J.  
 PATENT ASSIGNEE(S): The Children's Hospital of Philadelphia, USA  
 SOURCE: PCT Int. Appl., 74 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000041647	A1	20000720	WO 2000-US1317	20000119
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
US 6395029	B1	20020528	US 1999-234011	19990119

## PRIORITY APPLN. INFO.:

US 1999-234011 A 19990119

- AB The invention relates to compns. and methods for delivering a polyionic bioactive composition such as a nucleic acid to a tissue of an animal. The compns. of the invention include compns. which comprise a matrix comprising the polyionic bioactive agent and wherein at least most of the polyionic bioactive agent at the exterior portion of the matrix is present in a condensed form. The invention also includes methods of making such compns., including particles, devices, bulk materials, and other objects which comprise, consist of, or are coated with such compns. Methods of delivering a polyionic bioactive agent to an animal tissue are also described. The invention further includes a method of storing a nucleic acid.
- IC ICM A61F002-02  
ICS A61F002-06; A61F013-00; A61K009-14; A61K009-16; A61K009-127; A61K047-00; A61K047-48
- CC 63-5 (Pharmaceuticals)
- IT Polymers, biological studies  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (biodegradable; sustained delivery of nucleic acids and other polyionic bioactive agents)
- IT Gene, animal  
RL: BSU (Biological study, unclassified); BIOL (Biological study) (c-myb, antisense oligonucleotides for; sustained delivery of nucleic acids and other polyionic bioactive agents)
- IT Gene, animal  
RL: BSU (Biological study, unclassified); BIOL (Biological study) (c-myc, antisense oligonucleotides for; sustained delivery of nucleic acids and other polyionic bioactive agents)
- IT **Glycopeptides**  
Myelin basic protein  
Prolamins  
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses) (condensing agent; sustained delivery of nucleic acids and other polyionic bioactive agents)
- IT **Antisense oligonucleotides**  
Bone morphogenetic proteins  
Cocoa butter  
DNA  
Ethylene-propylene rubber  
Fluoropolymers, biological studies  
Neoprene rubber, biological studies  
Nitrile rubber, biological studies  
Platelet-derived growth factors  
Polyamides, biological studies  
Polyanhydrides  
Polycarbonates, biological studies  
Polyesters, biological studies  
Polyimides, biological studies  
Polyoxyalkylenes, biological studies  
Polysulfones, biological studies  
Polyurethanes, biological studies  
RNA  
Rayon, biological studies  
Ribozymes  
Silicone rubber, biological studies  
Stem cell factor  
Waxes

## cDNA

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(sustained delivery of nucleic acids and other polyionic bioactive agents)

- IT 100-97-0, Hexamine, biological studies 110-60-1, Putrescine 462-94-2, Cadaverine 9002-98-6 14127-61-8, Calcium ion, biological studies 16096-89-2, biological studies 18459-37-5, Cesium ion, biological studies 22537-22-0, Magnesium ion, biological studies 22537-23-1, Aluminum ion, biological studies 22541-12-4, Barium ion, biological studies 22541-63-5, Cobalt ion (Co3+), biological studies 24937-47-1, Polyarginine 24937-49-3, Polyornithine 25104-12-5, Polyornithine 25104-18-1, Polylysine 25212-18-4, Polyarginine 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine 28728-55-4, Polybrene 38000-06-5, Polylysine

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(condensing agent; sustained delivery of nucleic acids and other polyionic bioactive agents)

- IT 71-44-3, Spermine 124-20-9, Spermidine  
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(sustained delivery of nucleic acids and other polyionic bioactive agents)

- IT 97-90-5, Ethylene glycol dimethacrylate 1306-06-5, Hydroxyapatite 6606-65-1 7440-06-4, Platinum, biological studies 7440-32-6, Titanium, biological studies 7758-87-4, Tricalcium phosphate 9002-06-6, Thymidine kinase 9002-64-6, Pth 9002-72-6, Growth hormone 9002-84-0, Polytetrafluoroethylene 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-18-3, Acrylonitrile butadiene copolymer 9003-20-7, Polyvinylacetate 9003-27-4, Polyisobutylene 9003-31-0, Polyisoprene 9003-39-8, Polyvinylpyrrolidone 9003-42-3, Polyethylmethacrylate 9003-53-6, Polystyrene 9003-56-9, Acrylonitrile butadiene styrene copolymer 9004-35-7, Cellulose acetate 9004-53-9, Dextrin 9004-54-0, Dextran, biological studies 9005-32-7, Alginic acid 9011-14-7, Polymethylmethacrylate 9012-36-6, Agarose 9016-80-2, Polymethylpentene 9017-21-4, Polymethylstyrene 9046-31-5, Polystyrene carboxylic acid 10586-17-1, Isopropyl cyanoacrylate 12597-68-1, Stainless steel, biological studies 15802-18-3D, Cyanoacrylic acid, polyalkyl derivs. 21982-30-9, Hydroxymethyl methacrylate 24937-78-8, Ethylene vinyl acetate copolymer 24980-41-4, Polycaprolactone 24981-14-4, Polyvinyl fluoride 25068-26-2, Polymethylpentene 25087-26-7, Polymethacrylic acid 25102-52-7, Butadiene-isoprene copolymer 25248-42-4, Polycaprolactone 26009-03-0, Polyglycolic acid 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Polylactic acid 26124-68-5, Polyglycolic acid 50851-57-5, Polystyrene sulfonic acid 61128-18-5, Caprolactone-glycolic acid copolymer 61912-98-9, Insulin-like growth factor 62031-54-3, Fgf 80137-67-3, Caprolactone-lactic acid copolymer 139639-23-9, Tissue plasminogen activator

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(sustained delivery of nucleic acids and other polyionic bioactive agents)

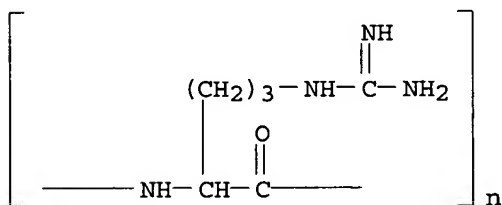
- IT 24937-47-1, Polyarginine 25104-18-1, Polylysine

25212-18-4, Polyarginine 38000-06-5, Polylysine  
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process);  
 USES (Uses)

(condensing agent; sustained delivery of nucleic acids and other  
 polyionic bioactive agents)

RN 24937-47-1 HCAPLUS

CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



RN 25104-18-1 HCAPLUS

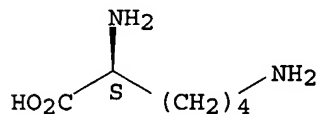
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1

CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 25212-18-4 HCAPLUS

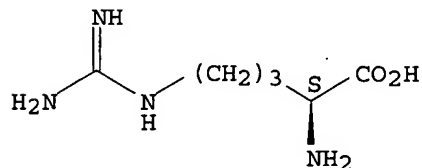
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-79-3

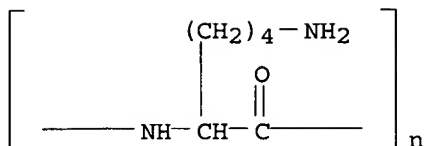
CMF C6 H14 N4 O2

Absolute stereochemistry.

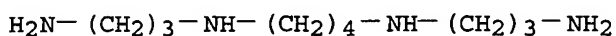


RN 38000-06-5 HCAPLUS

CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT 71-44-3, Spermine  
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (sustained delivery of nucleic acids and other polyionic bioactive agents)  
 RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



IT 9004-35-7, Cellulose acetate 9004-54-0, Dextran, biological studies 9005-32-7, Alginic acid  
 RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (sustained delivery of nucleic acids and other polyionic bioactive agents)  
 RN 9004-35-7 HCAPLUS  
 CN Cellulose, acetate (9CI) (CA INDEX NAME)

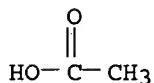
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 64-19-7  
 CMF C2 H4 O2



RN 9004-54-0 HCAPLUS  
 CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9005-32-7 HCAPLUS  
 CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



L39 ANSWER 23 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:338414 HCAPLUS

DOCUMENT NUMBER: 133:161397

TITLE: Optical detection of polycations via polymer  
film-modified microtiter plates: response mechanism  
and bioanalytical applicationsAUTHOR(S): Dai, Sheng; Ye, Qingshan; Wang, Enju; Meyerhoff, Mark  
E.CORPORATE SOURCE: Department of Chemistry, The University of Michigan,  
Ann Arbor, MI, 48109-1055, USASOURCE: Analytical Chemistry (2000), 72(14), 3142-3149  
CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Microtiter plate wells modified with thin (.apprx.20  $\mu$ m) polymeric films capable of optically sensing **macromol.** protamine and other polycationic species are described. The plates are prepared by coating the bottom of each well of a conventional 96-well polypropylene plate with an adherent polymer film (a mixture of poly(vinyl chloride) and polyurethane) containing a lipophilic 2',7'-dichlorofluorescein derivative. Surprisingly, optical response toward polycations is shown to result from the extraction of the fluorescein derivative from the polymer film into a lyophobic colloidal phase at the sample/film interface. This new phase is likely composed of a micellular-type ion pair complex between the analyte polycation from aqueous sample phase and the deprotonated form of the fluorescein derivative. Accumulation of the deprotonated fluorescein species in this interfacial region induces an absorbance change measured at 540 nm. Optimized plates can be used to sense protamine concns. in the range of 0-100  $\mu$ g/mL in 10 min with little or no response to physiol. levels of common cationic species ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Ca}^{2+}$ , etc.). The modified plates are shown to be useful as simple optical detectors for measuring heparin levels in plasma via titrns. with protamine and for monitoring protease activities (trypsin and plasmin) that cleave polycationic peptides/proteins such as protamine into smaller peptide fragments that are not detected by the sensing films. Assays for "clot busting" plasminogen activators (streptokinase, urokinase, and tissue plasminogen activator) are also demonstrated using this relatively simple microtiter plate-based polycation detection system.

CC 9-1 (Biochemical Methods)

IT Cations

(polyvalent; optical detection of polycations via polymer  
film-modified microtiter plates in relation to response mechanism and  
bioanal. applications)

IT 9001-90-5, Plasmin 9002-01-1, Streptokinase 9002-07-7, Trypsin  
9005-49-6, Heparin, analysis 9039-53-6, Urokinase 105913-11-9,  
Plasminogen activator

RL: ANT (Analyte); ANST (Analytical study)

(optical detection of polycations via polymer film-modified microtiter  
plates in relation to response mechanism and bioanal. applications)

IT 9005-49-6, Heparin, analysis

RL: ANT (Analyte); ANST (Analytical study)

(optical detection of polycations via polymer film-modified microtiter  
plates in relation to response mechanism and bioanal. applications)

RN 9005-49-6 HCAPLUS

CN Heparin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 24 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2000:307111 HCAPLUS  
 DOCUMENT NUMBER: 132:330579  
 TITLE: Nucleic acid detection using immobilized  
 target-concentrating capture probes and  
 target-specific probes  
 INVENTOR(S): Summerton, James E.; Weller, Dwight D.; Wages, John  
 M., Jr.  
 PATENT ASSIGNEE(S): AVI BioPharma, Inc., USA  
 SOURCE: U.S., 24 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6060246	A	20000509	US 1997-969813	19971113
PRIORITY APPLN. INFO.:			US 1996-30963P	P 19961115

AB The invention relates to compns. and methods for rapidly detecting or isolating a target nucleic acid sequence in a polynucleotide-containing sample. The method uses probes immobilized upon a matrix (a rapid pairing reagent) in company with a non-selective polynucleotide-binding agent (a rapid capture component) that serves to concentrate the target sequences near the probes immobilized on the same matrix. The probes and the rapid capture component are linked to the solid substrate via a cleavable linkage, such as disulfide, vicinal diol, ortho-nitrobenzyl ester, ester, a peptide, or oligosaccharide. Selectively disrupting the binding between the capture component and polynucleotides leaves only target sequence bound to the rapid pairing reagent. The capture component is preferably either a polymeric amine or a poly-uracil or poly-thymine sequence containing polynucleotide for binding poly-A tail containing nucleic acids. The target-specific probe is either a polynucleotide or an analog such as morpholino oligomer or peptide nucleic acid. The method optionally comprises exposing the rapid pairing reagent to a detectable reporter group, preferably cationic. A method and reagent for solid-phase enzymic amplification of the captured analyte mol. is also claimed. A reagent was prepared by attaching oligoamine capture probe and morpholino target-specific probe to a silica microparticle. Rabbit  $\alpha$ -globin and HIV-1 gag RNA transcripts were selectively captured using the method described.

IC ICM C12Q001-68  
 ICS C07H021-02; C07H021-04; C12N015-00

NCL 435006000

CC 3-1 (Biochemical Genetics)

ST RNA isolation morpholino probe hybridization oligoamine capture immobilization

IT Esters, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (aromatic, as cleavable linkage; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and oligoamine capture)

IT Disulfides  
 Esters, processes  
 Oligosaccharides, processes  
 Peptides, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)

- (as cleavable linkage; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Peptide nucleic acids  
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(as target-specific probe; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Polyelectrolytes  
(cationic, detectable reporter group; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Glass, uses  
RL: DEV (Device component use); USES (Uses)  
(immobilization of oligonucleotides and analogs on; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Oligonucleotides  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(immobilized, concentration of target sequences for hybridization with; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Oligonucleotides  
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(morpholino; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT mRNA  
RL: ANT (Analyte); ANST (Analytical study)  
(poly(A)-containing; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Human immunodeficiency virus 1  
Immobilization, biochemical  
Nucleic acid amplification (method)  
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Probes (nucleic acid)  
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Polyamines  
RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Microparticles  
(silica, as solid substrate; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
- IT Glycols, processes  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(vicinal, as cleavable linkage; reagent and method for isolation and

detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 612-25-9D, o-Nitrobenzyl alcohol, esters  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(as cleavable linkage; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 13822-56-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in immobilization of oligonucleotides on silica; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 7631-86-9, Silica, uses 9004-34-6, Cellulose, uses  
RL: DEV (Device component use); USES (Uses)  
(microparticles of, immobilization of oligonucleotides on; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 185767-62-8DP, biotin-labeled, morpholino-linked 267640-43-7DP, biotin-labeled, morpholino-linked 267640-44-8DP, biotin-labeled, morpholino-linked 267640-45-9DP, biotin-labeled, morpholino-linked  
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 267640-42-6DP, biotin-labeled, morpholino-linked  
RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 2038-03-1DP, 4-Morpholineethanamine, conjugates with activated cellulose 2706-56-1DP, 2-Pyridineethanamine, conjugates with activated cellulose 5036-48-6DP, 1-(3-Aminopropyl)imidazole, conjugates with activated cellulose  
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 267423-07-4  
RL: MOA (Modifier or additive use); USES (Uses)  
(spacer in immobilization of oligonucleotides; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 9004-34-6, Cellulose, uses  
RL: DEV (Device component use); USES (Uses)  
(microparticles of, immobilization of oligonucleotides on; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

RN 9004-34-6 HCAPLUS  
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 25 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:557804 HCAPLUS

DOCUMENT NUMBER: 132:26724

TITLE: An in vitro mucosal model predictive of bioadhesive

agents in the oral cavity  
 AUTHOR(S): Patel, D.; Smith, A. W.; Grist, N.; Barnett, P.;  
 Smart, J. D.  
 CORPORATE SOURCE: School of Pharmacy and Biomedical Sciences, Institute  
 of Biomedical and Biomolecular Sciences, Biomaterials  
 and Drug Delivery Group, University of Portsmouth,  
 Portsmouth, UK  
 SOURCE: Journal of Controlled Release (1999), 61(1-2), 175-183  
 CODEN: JCREEC; ISSN: 0168-3659  
 PUBLISHER: Elsevier Science Ireland Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The formulation of a drug/carrier complex that can be distributed and  
 retained for extended periods within the oral cavity would be advantageous  
 in the treatment of local conditions. In this study, an in vitro system  
 was developed to investigate the binding of bioadhesive macromols  
 . to buccal epithelial cells, without having to alter their physicochem.  
 properties by the addition of 'marker' entities. In this innovative  
 approach, a lectin-binding inhibition technique, involving an  
 avidin-biotin complex and a colorimetric detection system, was used to  
 evaluate polymer binding. 0.5% polymer solns. in saline (pH 7.6) were left  
 in contact with a standardized number of freshly collected human buccal cells  
 for 15 min. The cells were then exposed to 10 mg L-1 biotinylated lectin  
 from Canavalia ensiformis followed by 5 mg L-1 streptavidin peroxidase.  
 The inhibition of lectin binding (i.e., by 'masking' of the binding site  
 on the cell surface by the attached bioadhesive polymer) was measured and  
 expressed as a percentage reduction in the rate of o-phenylenediamine oxidation  
 over 1 min. From the wide range of polymer solns. screened, chitosan gave  
 the greatest inhibition of lectin binding to the surface of buccal cells,  
 while Me cellulose, gelatin, Carbopol 934P and polycarbophil also produced  
 a substantial reduction. Lectin binding inhibition was also observed for a  
 selected number of polymer solns. when screened at pH 6.2. The presence of  
 bound chitosan, polycarbophil and Carbopol 934P on the buccal cell surface  
 was confirmed using direct staining techniques. It was concluded that  
 this assay can be used to detect polymer binding to the cells present on  
 the buccal mucosa, and the information gained used in the development of  
 retentive drug/polymer formulations.

CC 63-5 (Pharmaceuticals)

IT **Polyelectrolytes**

(cationic; in vitro mucosal model prediction of binding of  
 bioadhesive agents to buccal epithelium)

IT **Macromolecular compounds**

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic  
 use); BIOL (Biological study); PROC (Process); USES (Uses)

(in vitro mucosal model prediction of binding of bioadhesive agents to  
 buccal epithelium)

IT 123-03-5, Cetylpyridinium chloride 9000-01-5, Acacia gum  
 9000-07-1, Carrageenan 9002-89-5, Poly(vinyl alcohol)  
 9003-01-4, Poly(acrylic acid) 9003-39-8, PVP 9003-97-8, Polycarbophil  
 9004-32-4, Carboxymethyl cellulose sodium salt 9004-61-9  
 , Hyaluronic acid 9004-62-0 9004-67-5, Methyl  
 cellulose 9005-38-3, Sodium alginate 11138-66-2,  
 Xanthan 25322-68-3, PEG 28728-55-4, Polybrene 57916-92-4, Carbopol  
 934P 75537-01-8, Gantrez S-97 96827-24-6, Carbopol 1342 145687-02-1,  
 Pemulen TR2 252191-11-0, Gantrez S 96  
 RL: BPR (Biological process); BSU (Biological study, unclassified); THU  
 (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (in vitro mucosal model prediction of binding of bioadhesive agents to  
 buccal epithelium)

IT 9012-76-4, Chitosan  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(in vitro mucosal model prediction of binding of bioadhesive agents to  
buccal epithelium)

IT 9000-07-1, Carrageenan 9004-32-4, Carboxymethyl  
cellulose sodium salt 9004-61-9, Hyaluronic acid  
9004-62-0 9004-67-5, Methyl cellulose 9005-38-3  
, Sodium alginate 11138-66-2, Xanthan  
RL: BPR (Biological process); BSU (Biological study, unclassified); THU  
(Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
(in vitro mucosal model prediction of binding of bioadhesive agents to  
buccal epithelium)

RN 9000-07-1 HCAPLUS  
CN Carrageenan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-32-4 HCAPLUS  
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

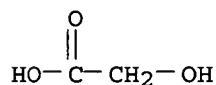
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
CMF C2 H4 O3



RN 9004-61-9 HCAPLUS  
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-62-0 HCAPLUS  
CN Cellulose, 2-hydroxyethyl ether (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 107-21-1  
CMF C2 H6 O2

HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

RN 9004-67-5 HCAPLUS  
CN Cellulose, methyl ether (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 67-56-1  
CMF C H4 O

H<sub>3</sub>C-OH

RN 9005-38-3 HCAPLUS  
CN Alginic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 11138-66-2 HCAPLUS  
CN Xanthan gum (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9012-76-4, Chitosan  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(in vitro mucosal model prediction of binding of bioadhesive agents to  
buccal epithelium)  
RN 9012-76-4 HCAPLUS  
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 26 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:185831 HCAPLUS

DOCUMENT NUMBER: 130:224319

TITLE: Novel polyanion-polycation microfibril blend nonwovens  
based on cellulose derivatives

AUTHOR(S): Riedel, B.; Taéger, E.

CORPORATE SOURCE: Thuringisches Inst. Textil- Kunststoff-Forschung  
e.V., Rudolstadt, Germany

SOURCE: Chemical Fibers International (1999), 49(1), 55-57  
CODEN: CFINF7; ISSN: 1434-3584

PUBLISHER: Deutscher Fachverlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyelectrolyte (PEL) fibrils and microfibrils were manufactured by shear  
coagulation in the presence of a desolvation medium (acetone, Me<sub>2</sub>SO, or  
low-mol. polyoxyethylene). Polyanion fibrils were obtained from aqueous  
solns. of Na-CM-cellulose. Polycation fibrils were obtained from

HCl-chitosan solns. The titer and the morphol. appearance of the fibrils were determined by the viscosity of the precipitation bath as well as of the PEL solution,

by the temperature, and by the acting shearing forces. It was possible to manufacture microfibrils with an average diameter  $\leq 1 \mu\text{m}$ . The morphol. of the polyanion (Pa) and polycation (Pc) fibrils was studied by scattering electron microscopy. Pa and Pc macromols. reacted along the contact surfaces of the related microfibrils forming hydroactive PEL complex membranes. A close PEL complex membrane lattice resulted in a blend nonwoven encapsulating the PEL microfibrils and sealing the nonwoven body closely. The finer the titer of the fibrils the closer the resulting PEL complex membrane lattice. The strength of the membrane lattice was the highest at an Pa/Pc ratio of 1:1. A procedure to ensure this ratio was depicted. The advantages of Pa/Pc microfibril blend nonwovens on basis of cellulose derivs. were mentioned.

CC 40-10 (Textiles and Fibers)

IT **Polyelectrolytes**

(cationic, fibers; properties of polyanion-polycation microfibril blend nonwovens based on cellulose derivs.)

IT 9004-32-4, CMC 70694-72-3, Chitosan hydrochloride

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(fibers; properties of polyanion-polycation microfibril blend nonwovens based on cellulose derivs.)

IT 9004-32-4, CMC

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(fibers; properties of polyanion-polycation microfibril blend nonwovens based on cellulose derivs.)

RN 9004-32-4 HCAPLUS

CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

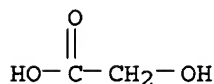
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1

CMF C2 H4 O3



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 27 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:706697 HCAPLUS

DOCUMENT NUMBER: 130:57102

TITLE: Amine composition influences apparent activity of enzyme in charged film microcapsules



AUTHOR(S): Patil, R. T.; Speaker, T. J.  
CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of  
Pharmacy, Temple University, Philadelphia, PA, 19140,  
USA  
SOURCE: Journal of Microencapsulation (1998), 15(6), 739-745  
CODEN: JOMIEF; ISSN: 0265-2048  
PUBLISHER: Taylor & Francis Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB It has been shown that, when captured in charged film microcapsules prepared from spermine alginate, intact viruses retain infectivity, isolated viral proteins retain immunogenicity, and trypsin retains enzymic activity. However, it was unclear whether the greater anionic strength of hemisulfate residues such as those in carrageenan might alter protein conformation and activity unfavorably in comparison with the lesser influence of alginate carboxylates. Further, the influence of the structure of the amine used to prepare the capsules was largely unknown. To examine these questions, trypsin, used as a model protein, was encased in microcapsules prepared from iota-carrageenan and **oligoamines** drawn from either the homologous series spermine, spermidine, putrescine or ethylenediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine. The gross structures of encapsulated and native trypsin were compared by denaturing electrophoresis and their enzymic activity by the method of Hummel. In all encapsulations SDS PAGE gave no evidence of alteration of protein structure. When encapsulated, the apparent activity of trypsin was reduced by about 60 to 75%, but when the capsules were lysed in hypertonic saline activity was restored. This apparent reduction in activity is attributed to the diffusional barrier imposed by the encapsulating membrane but it should be recognized that it may be the result of reversible denaturation.

CC 63-5 (Pharmaceuticals)

ST enzyme activity charged film microcapsule carrageenan **oligoamine**

IT 71-44-3, Spermine 107-15-3, Ethylenediamine, biological studies

110-60-1, Putrescine 111-40-0, Diethylenetriamine 112-24-3,

Triethylenetetramine 112-57-2, Tetraethylenepentamine 124-20-9,

Spermidine 9062-07-1,  $\iota$ -Carrageenan

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(amine composition influences apparent activity of enzymes in charged-film microcapsules)

IT 9062-07-1,  $\iota$ -Carrageenan

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(amine composition influences apparent activity of enzymes in charged-film microcapsules)

RN 9062-07-1 HCAPLUS

CN  $\iota$ -Carrageenan (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 28 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:420533 HCAPLUS

DOCUMENT NUMBER: 129:146546

TITLE: Aggrecan immobilization onto polystyrene plates  
through electrostatic interactions with spermine

AUTHOR(S): Vynios, D. H.; Vamvacas, S. S.; Kalpaxis, D. L.;  
Tsiganos, C. P.

CORPORATE SOURCE: Laboratory of Biochemistry, Department of Chemistry,  
University of Patras, Patras, 261 10, Greece

SOURCE: Analytical Biochemistry (1998), 260(1), 64-70  
CODEN: ANBCA2; ISSN: 0003-2697

PUBLISHER: Academic Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new procedure for the immobilization of proteoglycans and the core  
protein thereof via their carbohydrate chains onto ELISA (ELISA) plate  
wells is presented. The aggrecan was immobilized via electrostatic  
interactions with spermine coupled to glutaraldehyde via Schiff's base,  
the latter being directly anchored onto ELISA wells. The amts. of  
aggrecan bound by this procedure measured immunochem. were 10-fold greater  
than those adsorbed by direct coating. The interaction of aggrecan and  
spermine may be inhibited by very small amts. of sulfated  
glycosaminoglycans or proteoglycans in a competitive manner, and therefore  
the system may be used for their quantitation. Bound aggrecan could react  
with link protein and therefore the system may be used for studying  
interactions of cartilage **macromols**. The method may also be  
used for direct quantitation of proteoglycans since the amts. adsorbed, in  
a given range of concns., are directly proportional to the amts. in solution  
(c) 1998 Academic Press.

CC 9-10 (Biochemical Methods)

IT **Proteins, specific or class**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(core; aggrecan immobilization onto polystyrene plates through  
electrostatic interactions with spermine)

IT **9004-61-9, Hyaluronan** 9007-27-6, Chondroitin 9050-30-0,  
Heparan sulfate 24967-93-9, Chondroitin 4-sulfate  
RL: ANT (Analyte); ANST (Analytical study)  
(aggrecan immobilization onto polystyrene plates through electrostatic  
interactions with spermine)

IT **71-44-3, Spermine** 111-30-8, Glutaraldehyde  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(aggrecan immobilization onto polystyrene plates through electrostatic  
interactions with spermine)

IT **9004-61-9, Hyaluronan**  
RL: ANT (Analyte); ANST (Analytical study)  
(aggrecan immobilization onto polystyrene plates through electrostatic  
interactions with spermine)

RN 9004-61-9 HCAPLUS

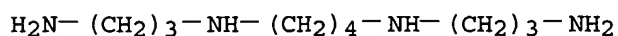
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT **71-44-3, Spermine**  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(aggrecan immobilization onto polystyrene plates through electrostatic  
interactions with spermine)

RN 71-44-3 HCAPLUS

CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 29 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:315262 HCAPLUS

DOCUMENT NUMBER: 129:92274

TITLE: **Macromolecular** design of cationic polyelectrolytes on the chitosan basis for achievement of high antimutagenic efficiency at gamma-irradiation

AUTHOR(S): Alexandrova, V. A.; Ryzhkov, D. V.; Obukhova, G. V.; Domnina, N. S.; Topchiev, D. A.; Kotlyarova, E. B.; Shevchenko, V. A.

CORPORATE SOURCE: A. V. Topchiev Institute Petrochemical Synthesis, Moscow, 117912, Russia

SOURCE: Macromolecular Symposia (1998), 130, 1-17  
CODEN: MSYMEC; ISSN: 1022-1360

PUBLISHER: Huethig &amp; Wepf Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new approach to the problem of construction of efficient antimutagenic (at  $\gamma$ -irradiation) systems was developed on the basis of the models, synthetic cationic polyelectrolytes, polyquaternary salts of diallyldimethylammonium type. Studies designed to reveal correlation between the structure and activity of polymers are of great importance for targeted synthesis of polymers capable to protect cells from  $\gamma$ -radiation. From this point of view a pos. contribution of the total charge of the macro-ion and antiradical activity of **polycations** into their antimutagenic effect were revealed. Taking into account the dependencies found, the **macromol.** design of super efficient antimutagenic systems on the basis of the natural **biodegradable polycation**-chitosan was realized. The protective efficiency ( $\leq 93\%$ ) of the systems is achieved by combination of an adsorption ability of the **polycation** matrix and antiradical activity of a hydrophobic derivative of hindered phenol incorporated into the polymer structure. These systems are able to scavenge short-lived radicals formed in water and to some extent to prevent the membrane lipid peroxidn. processes responsible for genetic damage at  $\gamma$ -irradiation

CC 8-2 (Radiation Biochemistry)

IT **Polyelectrolytes**

(**cationic; macromol. cationic** chitosan based polyelectrolytes for a high antimutagenic efficiency at  $\gamma$ -irradiation)

IT Mutation inhibitors

Radiation

Radical scavengers

(**macromol. cationic** chitosan based polyelectrolytes for a high antimutagenic efficiency at  $\gamma$ -irradiation)

IT 9012-76-4D, Chitosan, derivs. containing quaternary ammonium groups

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)

(**macromol. cationic** chitosan based polyelectrolytes for a high antimutagenic efficiency at  $\gamma$ -irradiation)

IT 26062-79-3, Poly(diallyldimethylammonium chloride) 53694-17-0  
209535-85-3

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(**macromol. cationic** chitosan based polyelectrolytes for a high antimutagenic efficiency at  $\gamma$ -irradiation)

IT 9012-76-4D, Chitosan, derivs. containing quaternary ammonium groups

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)

(macromol. cationic chitosan based polyelectrolytes for a high antimutagenic efficiency at  $\gamma$ -irradiation)

RN 9012-76-4 HCAPLUS  
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 30 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:667263 HCAPLUS

DOCUMENT NUMBER: 127:322794

TITLE: Property-affecting and/or property-exhibiting compositions for therapeutic and diagnostic uses  
INVENTOR(S): Rabbani, Elazar; Stavrianopoulos, Jannis G.; Donegan, James J.; Liu, Dakai; Kelker, Norman E.; Engelhardt, Dean L.

PATENT ASSIGNEE(S): Enzo Therapeutics, Inc., USA

SOURCE: Can. Pat. Appl., 275 pp.

CODEN: CPXXEB

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2190304	AA	19970616	CA 1996-2190304	19961114
EP 779365	A2	19970618	EP 1996-119961	19961212
EP 779365	A3	19991124		
R: DE, FR, GB, IT				
JP 09313190	A2	19971209	JP 1996-360043	19961216
US 2001006814	A1	20010705	US 1997-978633	19971125
US 2001006815	A1	20010705	US 1997-978634	19971125
US 2001006816	A1	20010705	US 1997-978637	19971125
US 2001007767	A1	20010712	US 1997-978632	19971125
US 2003087434	A1	20030508	US 1997-978635	19971125
US 2003104620	A1	20030605	US 1997-978636	19971125

PRIORITY APPLN. INFO.: US 1995-574443 A 19951215

AB Comps. useful for effecting and/or exhibiting changes in biol. functioning and processing in cells and biol. systems are provided which combine chemical modifications and/or ligand addns. with biol. functions in such a way as not to interfere substantially with the biol. functions. Such addnl. characteristics include nuclease resistance, targeting specific cells or cell receptors, and augmenting or decreasing interactions between the comps. and target cells. A title composition may constitute a nucleotide, nucleotide analog, nucleic acid, natural or synthetic polymer, ligand, or conjugate of a ligand with any of the preceding. For example, single-stranded DNA from a plasmid containing a gene of interest is complexed with an allylamine phosphoramidite-containing oligonucleotide primer (complementary to a region of the DNA distant from the gene of interest) which has been modified with trilactosyllslylsine (preparation given), and the primer is extended with Klenow enzyme to form completely double-stranded DNA. On exposure of target cells to this DNA, the galactose moieties on the DNA bind to receptors on the cells, resulting in transport of the DNA into the cells. In another embodiment, DNA for antisense RNA sequences to regions of the HIV genome were inserted into the U1 small nuclear RNA coding region and the DNA was used to

transform U937 cells. The transformed cells were resistant to HIV infection, as shown by inhibition of virus replication and p24 antigen production

IC ICM C07H021-00

ICS A61K047-48; A61K031-70; A61K038-55

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 3

IT **Polyelectrolytes**

RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(cationic; property-affecting and/or property-exhibiting compns. for therapeutic and diagnostic uses)

IT Antibodies

Fatty acids, biological studies

Polymers, biological studies

**Polysaccharides, biological studies**

Proteins, specific or class

RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(conjugates, with nucleic acids; property-affecting and/or property-exhibiting compns. for therapeutic and diagnostic uses)

IT Carbohydrates, biological studies

**Macromolecular compounds**

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(ligands; property-affecting and/or property-exhibiting compns. for therapeutic and diagnostic uses)

L39 ANSWER 31 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:479367 HCAPLUS

DOCUMENT NUMBER: 127:99844

TITLE: Complex cationic lipids as cytofectins

INVENTOR(S): Wheeler, Carl J.

PATENT ASSIGNEE(S): Vical Incorporated, USA

SOURCE: PCT Int. Appl., 55 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9719675	A2	19970605	WO 1996-US19721	19961127
WO 9719675	A3	19971002		

W: CA, JP

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

CA 2237316	AA	19970605	CA 1996-2237316	19961127
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EP 863749	A2	19980916	EP 1996-943691	19961127
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

JP 2000502061	T2	20000222	JP 1997-520757	19961127
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PRIORITY APPLN. INFO.:	US 1995-565756	A	19951130
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WO 1996-US19721	W	19961127
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OTHER SOURCE(S): MARPAT 127:99844

AB Cationic lipids (cytofectins) having a derivatized quaternary ammonium head group (Rosenthal phospholipase A inhibitor core structure) are provided which provide improved cell targeting ability and enhance transfective efficacy for neg. charged macromols. such as amino acids, peptides, polynucleotides, and polysaccharides. The head group is

attached to an alkyl linker having functional groups that provide sites for attachment of drugs, cell receptor ligands, or other bioactive agents. Thus, chloramphenicol acetyltransferase (CAT) DNA was coupled to (+)-N-(2-hydroxyethyl)-N,N-dimethyl-3,4-bis(lauryloxy)-1-propanaminium bromide (I) and administered intranasally to mice. The lungs were removed and extracted 2-3 days later and assayed for CAT. CAT expression was promoted by coupling to I.

IC ICM A61K009-127  
ICS C07C229-12; C07C237-06; C07C279-12; C07C275-16; C07C271-20  
CC 63-6 (Pharmaceuticals)  
IT **Polyelectrolytes**  
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
(anionic; complex cationic lipids as cytofectins)  
IT Amino acids, biological studies  
Monosaccharides  
Nucleic acids  
Nucleotides, biological studies  
Peptides, biological studies  
Polynucleotides  
**Polysaccharides, biological studies**  
Proteins, specific or class  
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
(conjugates, with cationic lipids; complex cationic lipids as cytofectins)

L39 ANSWER 32 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1997:266539 HCAPLUS  
DOCUMENT NUMBER: 126:257861  
TITLE: Aqueous etchant for microetching of copper and copper alloy  
INVENTOR(S): Maki, Yoshiaki; Nakagawa, Toshiko; Yamada, Yasushi; Haruta, Takashi; Arimura, Maki  
PATENT ASSIGNEE(S): Metsuku KK, Japan; MEC Co., Ltd.  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09041162	A2	19970210	JP 1995-196636	19950801
JP 3458023	B2	20031020		
CN 1249360	A	20000405	CN 1997-101824	19970129

PRIORITY APPLN. INFO.: JP 1995-196636 A 19950801

AB The etchant contains oxidants for Cu and 0.000001-1.0% macromol. compds. containing polyamine chains and/or cationic groups. The etchant provides coarsened Cu (alloy) surfaces showing excellent adhesion toward solder resists, and is useful for manufacture of wirings.

IC ICM C23F001-18  
ICS H01L021-308  
CC 76-14 (Electric Phenomena)  
Section cross-reference(s): 46, 56  
IT **Polyelectrolytes**

(**cationic**; polyamine chain- and/or **cationic**  
group-containing microetching agent for manufacture of printed circuit  
board)  
IT 79-06-1D, Acrylamide, copolymer with quaternary ammonium salt-type  
diallylamine 100-42-5D, Styrene, quaternary ammonium salt, polymers  
124-02-7D, Diallylamine, quaternary ammonium salt, copolymer with  
acrylamide 9002-98-6 **9004-34-6D**, Cellulose, cationic derivative,  
uses 26062-79-3, Unisence CP 104 63800-17-9, Sanfloc 700  
RL: MOA (Modifier or additive use); USES (Uses)  
(polyamine chain- and/or cationic group-containing microetching agent for  
manufacture of printed circuit board)  
IT **9004-34-6D**, Cellulose, cationic derivative, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(polyamine chain- and/or cationic group-containing microetching agent for  
manufacture of printed circuit board)  
RN 9004-34-6 HCAPLUS  
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 33 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:187508 HCAPLUS

DOCUMENT NUMBER: 126:268364

TITLE: Complexes of adenovirus with **polycationic**  
polymers and cationic lipids increase the efficiency  
of gene transfer in vitro and in vivo

AUTHOR(S): Fashbender, Al; Zabner, Joseph; Chillon, Miguel;  
Moninger, Thomas O.; Puga, Aurita P.; Davidson,  
Beverly L.; Welsh, Michael J.

CORPORATE SOURCE: Dep. Internal Med. and Physiology and Biophysics,  
Univ. Iowa College Med., Iowa City, IA, 52242, USA

SOURCE: Journal of Biological Chemistry (1997), 272(10),  
6479-6489

CODEN: JBCHA3; ISSN: 0021-9258

PUBLISHER: American Society for Biochemistry and Molecular  
Biology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Improving the efficiency of gene transfer remains an important goal in  
developing new treatments for cystic fibrosis and other diseases.  
Adenovirus vectors and non-viral vectors each have specific advantages,  
but they also have limitations. Adenovirus vectors efficiently escape  
from the endosome and enter the nucleus, but the virus shows limited  
binding to airway epithelia. Nonviral cationic vectors bind efficiently  
to the neg. charged cell surface, but they do not catalyze subsequent  
steps in gene transfer. To take advantage of the unique features of the  
two different vector systems, we noncovalently complexed cationic mols.  
with recombinant adenovirus encoding a transgene. Complexes of cationic  
polymers and cationic lipids with adenovirus increased adenovirus uptake  
and transgene expression in cells that were inefficiently infected by  
adenovirus alone. Infection by both complexes was independent of  
adenovirus fiber and its receptor and occurred via a different cellular  
pathway than adenovirus alone. Complexes of cationic mols. and adenovirus  
also enhanced gene transfer to differentiated human airway epithelia in  
vitro and to the nasal epithelium of cystic fibrosis mice in vivo. These  
data show that complexes of adenovirus and cationic mols. increase the  
efficiency of gene transfer, which may enhance the development of gene  
therapy.

CC 63-3 (Pharmaceuticals)

Section cross-reference(s): 3, 10

ST gene therapy adenovirus vector **polycation** lipid; cystic fibrosis  
gene therapy vector **polycation**

IT Gene, animal  
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
(CFTR; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Cystic fibrosis  
Gene therapy  
Human adenovirus  
Human adenovirus 2  
(adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Virus vectors  
(adenovirus; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Polyelectrolytes  
(cationic; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Lipids, biological studies  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(cationic; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Respiratory tract  
(epithelium, gene transfer to airway epithelium; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Nose  
(epithelium; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT Histones  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(non-lipid **polycations**; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT 2462-63-7, Dioleoylphosphatidylethanolamine 25104-18-1, Poly-L-lysine 38000-06-5, Poly-L-lysine  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT 137056-72-5  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(cholesterol-based cationic lipids; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT 124050-77-7, DOGS 153312-64-2, DMRIE 158571-62-1, Lipofectamine 188565-00-6, Tfx 50  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(non-cholesterol-based cationic lipids; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

IT 71-44-3, Spermine 9002-98-6 9015-73-0  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)



(non-lipid **polycations**; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

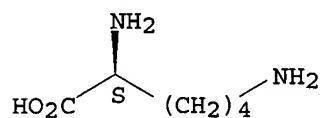
IT 25104-18-1, Poly-L-lysine 38000-06-5, Poly-L-lysine  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

RN 25104-18-1 HCAPLUS  
 CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

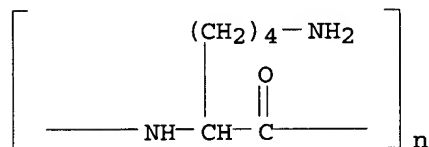
CM 1

CRN 56-87-1  
 CMF C6 H14 N2 O2

Absolute stereochemistry.

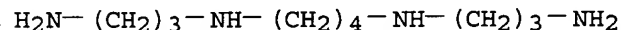


RN 38000-06-5 HCAPLUS  
 CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT 71-44-3, Spermine 9015-73-0  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (non-lipid **polycations**; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 9015-73-0 HCAPLUS  
 CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
CMF C6 H15 N O

Et<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-OH

L39 ANSWER 34 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:80110 HCAPLUS

DOCUMENT NUMBER: 126:71672

TITLE: Comb-Type **Polycations** Effectively Stabilize  
DNA Triplex

AUTHOR(S): Maruyama, Atsushi; Katoh, Maiko; Ishihara, Tsutomu;  
Akaike, Toshihiro

CORPORATE SOURCE: Department of Biomolecular Engineering, Tokyo  
Institute of Technology, Yokohama, 226, Japan

SOURCE: Bioconjugate Chemistry (1997), 8(1), 3-6  
CODEN: BCCHES; ISSN: 1043-1802

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB DNA triplex formation has been studied as a potential strategy for regulation of gene expression. The triplex is, however, unstable under physiol. conditions, so that an effective stabilizer for the triplex formation is needed. Here is shown a novel strategy to stabilize the triplex based on the mol. design of a comb-type **polycation**. Linear **polycations**, such as poly(L-lysine) and poly(L-arginine), thermally stabilize DNA duplexes (and triplexes). The complexes between DNA and the **polycation** are irreversible and are liable to precipitate out of aqueous media. The irreversibility and phase separating properties of

the complex impede association of single-stranded (ss) DNAs in the complex to form duplexes and triplexes. A comb-type **polycation** consisting of a poly(L-lysine) backbone and grafted chains of hydrophilic polymers was prepared. The comb-type copolymers increased solubility of their complex with

DNA and suppressed conformational changes of DNA. Thermal melting curve analyses revealed that the comb-type copolymer markedly stabilized DNA triplexes and did not disturb ssDNAs in forming duplexes and triplexes. Reversible and one-step melting/reassocn. transitions of poly(dA)·2poly(dT) triplex were shown in the presence of the copolymers. The stabilizing effect of the copolymer was larger than that of spermine, a polyamine considered effective in stabilizing triplexes. These results indicated that mol. design of **polycations** with a comb-type structure is a novel strategy to create efficient triplex stabilizers. Such comb-type copolymer consisting of various types of **polycation** backbones and hydrophilic graft chains may have many applications in which specific and precise interactions of polynucleotides are involved.

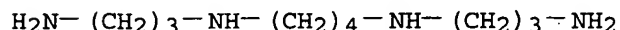
CC 6-2 (General Biochemistry)  
Section cross-reference(s): 34

ST comb copolymer **polycation** DNA triplex stabilization

IT Quaternary structure  
(DNA triplex; comb-type **polycation** preparation and stabilization of DNA triplex)

IT Polyelectrolytes  
(cationic; comb-type **polycation** preparation and stabilization of

- IT DNA triplex)  
Conformation  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT DNA  
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT 71-44-3, Spermine  
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); BIOL (Biological study); PROC (Process)  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT 9004-54-0DP, Dextran, polylysine graft comb copolymer, biological studies 25104-18-1DP, Poly-L-lysine, dextran graft comb copolymer 38000-06-5DP, Poly-L-lysine, dextran graft comb copolymer  
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT 30177-40-3  
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT 25988-63-0, Poly(L-lysine) hydrobromide  
RL: MSC (Miscellaneous); RCT (Reactant); RACT (Reactant or reagent)  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT 9004-54-0, Dextran, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(comb-type polycation preparation and stabilization of DNA triplex)
- IT 71-44-3, Spermine  
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); BIOL (Biological study); PROC (Process)  
(comb-type polycation preparation and stabilization of DNA triplex)
- RN 71-44-3 HCAPLUS  
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



- IT 9004-54-0DP, Dextran, polylysine graft comb copolymer, biological studies 25104-18-1DP, Poly-L-lysine, dextran graft comb copolymer 38000-06-5DP, Poly-L-lysine, dextran graft comb copolymer  
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)  
(comb-type polycation preparation and stabilization of DNA triplex)

RN 9004-54-0 HCAPLUS  
 CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

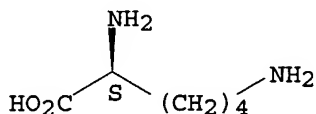
RN 25104-18-1 HCAPLUS  
 CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

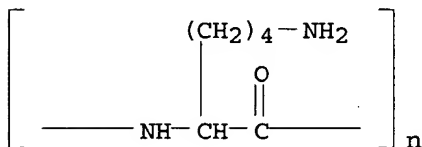
CRN 56-87-1

CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS  
 CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT 9004-54-0, Dextran, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (comb-type polycation preparation and stabilization of DNA triplex)

RN 9004-54-0 HCAPLUS  
 CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 35 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:645650 HCAPLUS

DOCUMENT NUMBER: 125:283945

TITLE: Muddy water flocculating method useful for dredging and reclaiming work fields

INVENTOR(S): Matsumoto, Katsumi

PATENT ASSIGNEE(S): Kurita Water Ind Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08215686	A2	19960827	JP 1995-49002	19950214
PRIORITY APPLN. INFO.:			JP 1995-49002	19950214

AB Cationic polysaccharides and anionic **macromol.** compds. are added to muddy water to carry out flocculation treatment for the muddy water. The separated mud has high coherent d. and solid-liquid separation can be carried out easily.

IC ICM C02F001-54

ICS B01D021-01; C02F001-56

CC 60-2 (Waste Treatment and Disposal)

Section cross-reference(s): 58

ST flocculation muddy water dredging reclaiming field; anionic polymer flocculant muddy water; cationic polysaccharide flocculant muddy water; muddy water flocculant ionic **macromol**

IT Drilling fluids and muds

**Polyelectrolytes**

(cationic polysaccharide and anionic **macromol.** compound for muddy water flocculation)

IT **Polysaccharides, uses**

RL: TEM (Technical or engineered material use); USES (Uses)

(cationic, cationic polysaccharide and anionic **macromol.** compound for muddy water flocculation)

IT Wastewater treatment

(flocculation, cationic polysaccharide and anionic **macromol.** compound for muddy water flocculation)

IT 9003-06-9, Acrylamide-acrylic acid copolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(anionic; cationic polysaccharide and anionic **macromol.** compds. for muddy water flocculation)

IT 9000-30-0D, Guar gum, cationized 9005-25-8D, Starch, cationized

RL: TEM (Technical or engineered material use); USES (Uses)

(cationic polysaccharide and anionic **macromol.** compound for muddy water flocculation)

IT 9000-30-0D, Guar gum, cationized 9005-25-8D, Starch, cationized

RL: TEM (Technical or engineered material use); USES (Uses)

(cationic polysaccharide and anionic **macromol.** compound for muddy water flocculation)

RN 9000-30-0 HCAPLUS

CN Guar gum (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9005-25-8 HCAPLUS

CN Starch (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 36 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:534978 HCAPLUS

DOCUMENT NUMBER: 125:160359

TITLE: **Polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity

INVENTOR(S): De Polo, Nicholas J.; Hsu, David Chi-Tang

PATENT ASSIGNEE(S): Chiron Viagene, Inc., USA

SOURCE: PCT Int. Appl., 68 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

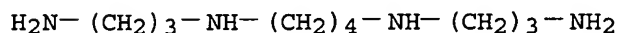
FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9621036	A2	19960711	WO 1995-US17005	19951226
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9646905	A1	19960724	AU 1996-46905	19951226
PRIORITY APPLN. INFO.:			US 1994-366787	19941230
			WO 1995-US17005	19951226
AB	Nucleic acid condensing agents with reduced immunogenicity are generated either by conjugation of <b>polycations</b> or by selection of basic amino acid regions from proteins. Conjugation involves a chemical linkage between a polyalkylene glycol, such as polyethylene glycol, or a polysaccharide, such as dextran, and a <b>polycation</b> . Addnl., gene delivery vehicles, such as viral vectors, may be conjugated with polyalkylene glycol or polysaccharide, to reduce their immunogenicity. Basic amino acid regions of proteins are identified by isoelec. point, and amino acid composition. These condensing agents are complexed with nucleic acids and used to deliver agents to cells. Immunogenicity is assessed by whether neutralizing antibody is induced and by whether a serum component inactivates the complexes.			
IC	ICM C12N015-87 ICS A61K047-87			
CC	3-1 (Biochemical Genetics)			
ST	nucleic acid condensing agent immunogenicity <b>polycationic</b> ; transformation nucleic acid condensing agent			
IT	Antibodies Transferrins RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses) (conjugates with DNA- <b>polycation</b> complexes for targeted delivery; <b>polycationic</b> conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)			
IT	Polyoxyalkylenes, biological studies Polysaccharides, biological studies RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (conjugates with <b>polycations</b> ; <b>polycationic</b> conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)			
IT	Transformation, genetic ( <b>polycationic</b> complexes for delivery of nucleic acids in; <b>polycationic</b> conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)			
IT	Nucleic acids RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses) ( <b>polycationic</b> conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)			
IT	Sialoglycoproteins RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)			

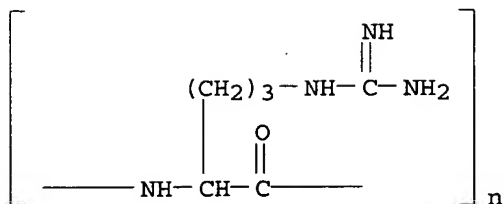
- (asialo-, conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **Peptides, biological studies**  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (basic, conjugates, with polyalkylene glycols or polysaccharides; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **Histones**  
**Protamines**  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (conjugates, with polyalkylene glycols or polysaccharides; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **Therapeutics**  
 (geno-, **polycationic** complexes for delivery of nucleic acids in; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **Hemopoietins**  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (hematopoietic cell growth factors KL, conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **Lymphokines and Cytokines**  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (interleukins, conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **Lipoproteins**  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (low-d., conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT **71-44-3D, Spermine, conjugates with polyalkylene glycols or polysaccharides 110-60-1D, Putrescine, conjugates with polyalkylene glycols or polysaccharides 124-20-9D, Spermidine, conjugates with polyalkylene glycols or polysaccharides 24937-47-1D, Polyarginine, conjugates with polyalkylene glycols or polysaccharides 24937-49-3D, Polyornithine, conjugates with polyalkylene glycols or polysaccharides 25104-12-5D, Polyornithine, conjugates with polyalkylene glycols or polysaccharides 25104-18-1D, Polylysine, conjugates with PEG 25212-18-4D, Polyarginine, conjugates with polyalkylene glycols or polysaccharides 38000-06-5D, Polylysine, conjugates with PEG**  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

- (as nucleic acid condensing agent; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT 11096-26-7, Erythropoietin 81627-83-0, M-CSF 83869-56-1, GM-CSF 143011-72-7, G-CSF  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT 9004-54-0DP, Dextran, conjugates with **polycations** 25322-68-3DP, conjugates with **polycations**  
 RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (**polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT 111575-54-3P  
 RL: BUU (Biological use, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation and conjugation with **polycations** of; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT 79934-70-6DP, conjugate with polylysine  
 RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of, as DNA condensing agent; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- IT 71-44-3D, Spermine, conjugates with polyalkylene glycols or polysaccharides 24937-47-1D, Polyarginine, conjugates with polyalkylene glycols or polysaccharides 25104-18-1D, Polylysine, conjugates with PEG 25212-18-4D, Polyarginine, conjugates with polyalkylene glycols or polysaccharides 38000-06-5D, Polylysine, conjugates with PEG  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (as nucleic acid condensing agent; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
- RN 71-44-3 HCAPLUS  
 CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



- RN 24937-47-1 HCAPLUS  
 CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



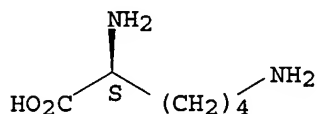


RN 25104-18-1 HCAPLUS  
 CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1  
 CMF C6 H14 N2 O2

Absolute stereochemistry.

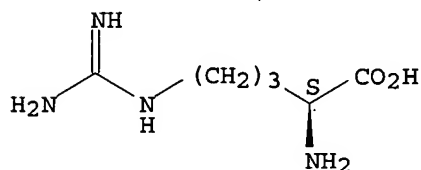


RN 25212-18-4 HCAPLUS  
 CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

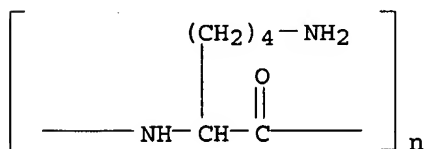
CM 1

CRN 74-79-3  
 CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS  
 CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT 9004-54-0DP, Dextran, conjugates with polycations  
 RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (polycationic conjugates of polyalkylene glycols or

polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

RN 9004-54-0 HCAPLUS

CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 37 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:398014 HCAPLUS

DOCUMENT NUMBER: 122:185284

TITLE: The role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration

AUTHOR(S): Elferink, Jan G. R.; de Koster, Ben M.

CORPORATE SOURCE: Department of Medical Biochemistry, University of Leiden, POB 9503, RA Leiden, 2300, Neth.

SOURCE: Chemico-Biological Interactions (1995), 95(1,2), 203-14

CODEN: CBINA8; ISSN: 0009-2797

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The polycation DEAE-dextran caused a strong enhancement of non-directed migration of rabbit peritoneal neutrophils. The activating effect on migration was completely annulled in the presence of the polyanion poly-D-glutamic acid, indicating that the effect depended on the positive charge of the macromol. Chemotaxis activated by the chemotactic peptide fMLP was only slightly affected by the polycation. In contrast with fMLP-activation, stimulation of migration by DEAE-dextran was dependent on the presence of extracellular  $\text{Ca}^{2+}$ . DEAE-dextran also stimulated migration of electroporated neutrophils. The stimulation was absent when calcium was not present; the increase of migration was strongest at  $\text{Ca}^{2+}$  concns. between 100 nM and 1  $\mu\text{M}$   $\text{Ca}^{2+}$ . This indicates that the requirement for extracellular  $\text{Ca}^{2+}$  in intact cells is a reflection of the intracellular requirement. Several types of calcium blockers gave a moderate inhibition of DEAE-dextran activated migration. Activation of migration by DEAE-dextran of electroporated neutrophils was completely inhibited by calcium channel blockers, at very low concns. The results suggest that both  $\text{Ca}^{2+}$  fluxes across the plasma membrane and  $\text{Ca}^{2+}$  from intracellular stores are required for DEAE-activated migration, and that the calcium from the intracellular source is required on a place where the extracellular  $\text{Ca}^{2+}$  has no, or limited, admittance.

CC 15-10 (Immunochemistry)

IT Cations

(polyvalent, role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration)

IT 9015-73-0

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration)

IT 9015-73-0

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration)

RN 9015-73-0 HCAPLUS

CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
CMF C6 H15 N O

Et<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-OH

L39 ANSWER 38 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:259960 HCAPLUS

DOCUMENT NUMBER: 122:38839

TITLE: Microcapsules containing cells or enzymes for  
pharmaceutical use

INVENTOR(S): Schrezenmeir, Juergen; Pommersheim, Rainer; Vogt,  
Walter

PATENT ASSIGNEE(S): Germany

SOURCE: Ger. Offen., 8 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4312970	A1	19941027	DE 1993-4312970	19930421
EP 681834	A1	19951115	EP 1994-107025	19940505
EP 681834	B1	19991208		
R: CH, DE, DK, ES, FR, GB, GR, IT, LI, NL				
ES 2143513	T3	20000516	ES 1994-107025	19940505
GR 3032897	T3	20000731	GR 2000-400592	20000307

PRIORITY APPLN. INFO.: DE 1993-4312970 19930421  
EP 1994-107025 A 19940505

AB Microcapsules are prepared for implantation in tissues or for biotechnol. use which comprise a core containing living cells and/or enzymes, surrounded by multiple biocompatible coating layers. Each coating layer consists of a network of interwoven **macromols.** which form a porous membrane; the pores of adjacent layers interconnect to form continuous radial passages. At least 1 of the layers is mech. stable, and  $\geq 1$  layer has a pore size at least as large as (a) the mols. required for maintenance of the enclosed cells or (b) the substrates, cofactors, or products of the enclosed enzymes. Methods for preparation of core particles (droplets) of precisely regulated diameter in a compression chamber undergoing magnetostrictive or piezoelec. volume change, and for coating the core particles with anionic, cationic, or neutral polymers, are described.

IC ICM B01J013-02

ICS A61K009-50; C12N009-00; C12N005-00; A61F002-02

CC 63-6 (Pharmaceuticals)

IT **Polyelectrolytes**

(cationic, porous coatings; microcapsules containing cells or

enzymes for pharmaceutical use)  
 IT **Polysaccharides, biological studies**  
 RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (sulfates, porous coatings; microcapsules containing cells or enzymes for  
 pharmaceutical use)  
 IT 9002-98-6, Polyethylenimine 9003-01-4, Poly(acrylic acid)  
**9012-76-4**, Chitosan 25087-26-7, Poly(methacrylic acid)  
 26101-52-0, Poly(vinylsulfonic acid) 27754-99-0, Poly(vinylphosphonic  
 acid) 28301-34-0  
 RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (porous coatings; microcapsules containing cells or enzymes for  
 pharmaceutical use)  
 IT **9012-76-4**, Chitosan  
 RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (porous coatings; microcapsules containing cells or enzymes for  
 pharmaceutical use)  
 RN 9012-76-4 HCAPLUS  
 CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 39 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1994:646185 HCAPLUS  
 DOCUMENT NUMBER: 121:246185  
 TITLE: Hyaluronic acid inhibits polycation-induced cellular  
 responses  
 AUTHOR(S): Ialenti, A.; Ianaro, A.; Brignola, G.; Marotta, P.;  
 Rosa, M. Di  
 CORPORATE SOURCE: Department of Experimental Pharmacology, University of  
 Naples 'Federico II', Naples, 49-80131, Italy  
 SOURCE: Mediators of Inflammation (1994), 3(4), 287-9  
 CODEN: MNFLEF; ISSN: 0962-9351  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Pos. charged macromols. cause a variety of pathol. events  
 through their electrostatic interaction with anionic sites present on the  
 membrane of target cells. The present study investigated the effect of  
 hyaluronic acid, a neg. charged mol., on rat paw edema induced by  
 poly-L-lysine as well as on the histamine release from rat mast cells and  
 NO formation by rabbit aorta, both induced by this polycation. Hyaluronic  
 acid suppressed these poly-L-lysine-induced effects, possibly due to its  
 neg. charges, which may balance the effects of pos. charged polycations.  
 CC 1-12 (Pharmacology)  
 IT **Cations**  
 (polyvalent, hyaluronic acid inhibition of cellular responses  
 to)  
 IT **9004-61-9**, Hyaluronic acid  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES  
 (Uses)  
 (hyaluronic acid inhibition of cellular responses to polycations)  
 IT **9004-61-9**, Hyaluronic acid  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES  
 (Uses)  
 (hyaluronic acid inhibition of cellular responses to polycations)

RN 9004-61-9 HCAPLUS  
 CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 40 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:642942 HCAPLUS

DOCUMENT NUMBER: 119:242942

TITLE: Detection of nucleic acids with immobilized  
 polynucleotide analogs and polycationic  
 reporter moieties

INVENTOR(S): Summerton, James; Weller, Dwight

PATENT ASSIGNEE(S): Anti-gene Development Group, USA

SOURCE: U.S., 43 pp. Cont.-in-part of U.S. Ser. No. 712,396.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5217866	A	19930608	US 1986-944707	19861218
EP 639582	A2	19950222	EP 1994-116630	19860314
EP 639582	A3	19950906		
EP 639582	B1	19980916		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 5142047	A	19920825	US 1987-100033	19870923
US 5034506	A	19910723	US 1989-454055	19891220
US 5235033	A	19930810	US 1989-454056	19891220
US 5185444	A	19930209	US 1991-799681	19911121
US 5521063	A	19960528	US 1993-15211	19930209
US 5378841	A	19950103	US 1993-74120	19930608
US 5470974	A	19951128	US 1994-202664	19940225
US 5506337	A	19960409	US 1994-242159	19940511
US 5698685	A	19971216	US 1995-414018	19950331

PRIORITY APPLN. INFO.:

US 1985-712396	A2	19850315
US 1986-907842	A2	19860910
US 1986-911258	A2	19860924
EP 1986-902595	A3	19860314
US 1986-944707	A2	19861218
US 1987-100033	A2	19870923
US 1989-454055	A2	19891220
US 1989-454056	A1	19891220
US 1989-454057	B1	19891220
US 1991-719732	A2	19910620
US 1991-799681	A1	19911121
US 1992-880883	B1	19920508
US 1992-979158	A1	19921128
US 1992-988895	B2	19921210
US 1993-15211	A2	19930209
US 1994-242159	A3	19940511

AB A fast, sensitive, single-probe method for detection of nucleic acids using a carrier-bound polynucleotide analog as probe and a reporter moiety with a polycationic tail is described. The hybridization probe is a polymer carrying purines and pyrimidines on an achiral, uncharged backbone; the backbone has no net charge and is 4-7 atoms long to give the appropriate spacing for successful base-pairing. The reporter moiety has a polycationic tail that reacts with the polyanionic backbone of

the bound nucleic acid, but not with the uncharged probe. A 19-subunit carbamate-linked probe for a conserved sequence of the AIDS virus was prepared by stepwise assembly of oligonucleotide blocks using chemical of the prior art. Aminomethylated polystyrene was derivatized with succinic anhydride followed by disuccinimido carbonate and 6-aminohexanol to give a hydroxyterminated spacer that was then activated by standard methods. Internal amino groups were protected and the probe was then coupled to the carrier using an active amino group. The coupling of reporter enzymes to the **polycationic** reporter moiety is also described.

- IC ICM C12Q001-68
- NCL 435006000
- CC 3-1 (Biochemical Genetics)  
Section cross-reference(s): 7, 9
- ST polynucleotide analog nucleic acid hybridization; nucleic acid hybridization **polycationic** reporter
- IT Nucleic acid hybridization  
(immobilized uncharged polynucleotide analog as probe and **polycationic** reporter moieties in)
- IT Virus, animal  
(AIDS-associated retrovirus 2, determination by nucleic acid hybridization of,  
immobilized oligonucleotide probes with uncharged backbones for and **polycationic** reporter moieties in)
- IT **Nucleotides, polymers**  
RL: PREP (Preparation)  
(di-, amide-linked, preparation of, in synthesis of oligonucleotide probes with uncharged backbones)
- IT Virus, animal  
(herpes simplex, determination by nucleic acid hybridization of, immobilized oligonucleotide probes with uncharged backbones for and **polycationic** reporter moieties in)
- IT **Nucleotides, polymers**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(oligo-, morpholinylthiocarbamate-linked, preparation of)
- IT Amines, biological studies  
RL: BIOL (Biological study)  
(poly-, as **polycationic** tail of reporter oligonucleotides for nucleic acid hybridization)
- IT Amides, reactions  
RL: PREP (Preparation)  
(poly-, oligomeric, reduction of, in preparation **polycationic** tails for reporter oligonucleotides for nucleic acid hybridization)
- IT **151170-95-5**  
RL: USES (Uses)  
(**polycationic** tail for reporter oligonucleotide for nucleic acid hybridization)
- IT 109970-45-8P  
RL: PREP (Preparation)  
(preparation of, as **polycationic** fluorescent reporter for nucleic acid hybridization)
- IT 102-71-6, Triethanolamine, reactions 108-30-5, Succinic anhydride, reactions 556-33-2, Triglycine 7087-68-5, Diisopropylethylamine 9003-53-6D, Polystyrene, aminomethylated 9004-34-6, Cellulose, reactions 12640-54-9D, Dowex 50, pyridinium resins 16969-45-2D, Dowex 50 resins 74124-79-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactions of, in preparation matrix for immobilization of oligonucleotide analogs with uncharged backbones)
- IT 105-83-9, Bis-(3-aminopropyl)methylamine 605-65-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactions of, in preparation polycationic fluorescent reporter  
for nucleic acid hybridization)

IT 151170-95-5

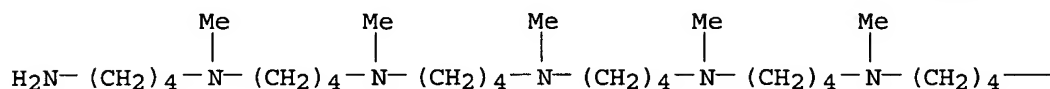
RL: USES (Uses)

(polycationic tail for reporter oligonucleotide for nucleic  
acid hybridization)

RN 151170-95-5 HCAPLUS

CN 5,10,15,20,25-Pentaazanonacosane-1,29-diamine, N,N,5,10,15,20,25-  
heptamethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—NMe<sub>2</sub>

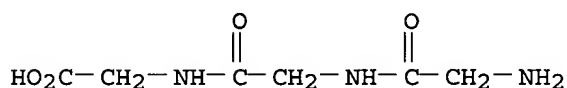
IT 556-33-2, Triglycine 9004-34-6, Cellulose, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactions of, in preparation matrix for immobilization of oligonucleotide  
analogs with uncharged backbones)

RN 556-33-2 HCAPLUS

CN Glycine, glycylglycyl- (9CI) (CA INDEX NAME)



RN 9004-34-6 HCAPLUS

CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 41 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:487148 HCAPLUS

DOCUMENT NUMBER: 117:87148

TITLE: Polyionic regulation of cartilage development:  
promotion of chondrogenesis in vitro by polylysine is  
associated with altered glycosaminoglycan biosynthesis  
and distribution

AUTHOR(S): San Antonio, James D.; Jacenko, Olena; Yagami,  
Machiko; Tuan, Rocky S.

CORPORATE SOURCE: Dep. Biol., Univ. Pennsylvania, Philadelphia, PA,  
19104, USA

SOURCE: Developmental Biology (Orlando, FL, United States)  
(1992), 152(2), 323-35

CODEN: DEBIAO; ISSN: 0012-1606

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The development of cartilage nodules in cultures of chick limb bud mesenchyme (Hamburger-Hamilton stages 23/24) is significantly promoted when the culture medium is supplemented with poly-L-lysine (PL) (Mr  $\geq 14$  K). The findings presented here are consistent with the hypothesis that PL may promote chondrogenesis by interacting electrostatically with sulfated glycosaminoglycans (GAGs): (1) poly-L-ornithine, poly-L-histidine, poly-D,L-lysine, and lysine-containing heteropolypeptides stimulate chondrogenesis in proportion to their contents of cationic residues; (2) the effects of PL are diminished when limb mesenchyme cultures are supplemented with exogenous GAGs, including heparin, dermatan sulfate, and chondroitin sulfate; (3) in high d. cultures of limb bud mesenchyme, the release of sulfated **macromols** .., but not of proteins in general, into the culture medium was significantly inhibited by PL (398K Mr) treatment, and a net increase in total GAG content of the PL-treated cultures was observed; and (4) in monolayer cultures of cells derived from other chick embryonic tissues, including liver, skeletal muscle, and calvaria, PL treatment promoted the cell layer-associated retention of sulfated GAG. These effects were not observed using the nonstimulatory, low Mr PL (4K). It is proposed that PL may promote chondrogenesis by interacting electrostatically with cartilage GAGs, thus trapping the extracellular matrix around the newly emerging cartilage nodules and thereby stabilizing their growth and differentiation.

CC 12-3 (Nonmammalian Biochemistry)

IT **Glycosaminoglycans, biological studies**

RL: FORM (Formation, nonpreparative)

(formation of, cartilage development in chicken in relation to)

IT **Polyelectrolytes**

(cationic, cartilage development in chicken response to)

L39 ANSWER 42 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:533349 HCAPLUS

DOCUMENT NUMBER: 115:133349

TITLE: Polycations induce microvascular leakage of **macromolecules** in hamster cheek pouch

AUTHOR(S): Rosengren, Sanna; Arfors, Karl E.

CORPORATE SOURCE: Pharm. Exp. Med., La Jolla, CA, 92037, USA

SOURCE: Inflammation (New York, NY, United States) (1991), 15(3), 159-72

CODEN: INFLD4; ISSN: 0360-3997

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The microvascular response to two polycationic proteins, poly-L-lysine (mol wt 104,000) and leukocyte elastase, was studied in the hamster cheek pouch microcirculation model. A 2-min topical application of polylysine (100  $\mu\text{g/mL}$ ) induced vigorous **macromol.** leakage from venules only that declined within 30 min. A second application induced significantly less leakage. The leakage was inhibited by admixing polylysine with dextran sulfate prior to application or by giving hamsters an i.v. injection of dextran sulfate. The histamine antagonist pyrilamine did not interfere with the leakage, and only a few degranulated mast cells were found after polylysine application. No intravascular adhesion of leukocytes could be detected. Elastase (100  $\mu\text{g/mL}$ ) was deposited adjacent to venules with micropipets. The resulting leakage response was not inhibited by L658,758, an inhibitor of elastase enzymic activity, but by dextran sulfate. These results may prove significant in light of the numerous polycationic proteins present within neutrophil granules.



CC 14-11 (Mammalian Pathological Biochemistry)  
ST polycation venule **macromol** leakage inflammation; poly lysine  
venule **macromol** leakage inflammation; leukocyte elastase venule  
**macromol** leakage inflammation  
IT Leukocyte  
(elastase of, **macromol**. leakage from venules of cheek pouch  
induced by, inflammation in relation to)  
IT Inflammation  
(leukocyte elastase and polylysine induction of **macromol**.  
leakage from venules of cheek pouch in relation to)  
IT Cations  
(polyvalent, **macromol**. leakage from venules of  
cheek pouch induced by, polyanion inhibition of, inflammation in  
relation to)  
IT Anions  
(polyvalent, polycation-induced **macromol**. leakage from  
venules of cheek pouch inhibition by, inflammation in relation to)  
IT Cheek  
(pouch, leukocyte elastase and polylysine induction of **macromol**  
. leakage from venules of, inflammation in relation to)  
IT Vein  
(venule, leukocyte elastase and polylysine induction of  
**macromol**. leakage from, of cheek pouch, inflammation in  
relation to)  
IT 9004-06-2, Elastase  
RL: BIOL (Biological study)  
(leukocyte, **macromol**. leakage from venules of cheek pouch  
induced by, dextran sulfate inhibition of, inflammation in relation to)  
IT 25104-18-1, Poly-L-lysine 38000-06-5, Poly-L-lysine  
RL: BIOL (Biological study)  
(**macromol**. leakage from venules of cheek pouch induced by,  
dextran sulfate inhibition of, inflammation in relation to)  
IT 9042-14-2, Dextran sulfate  
RL: BIOL (Biological study)  
(polycation-induced **macromol**. leakage from venules of cheek  
pouch inhibition by, inflammation in relation to)  
IT 9042-14-2, Dextran sulfate  
RL: BIOL (Biological study)  
(polycation-induced **macromol**. leakage from venules of cheek  
pouch inhibition by, inflammation in relation to)  
RN 9042-14-2 HCAPLUS  
CN Dextran, hydrogen sulfate (9CI) (CA INDEX NAME)

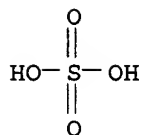
CM 1

CRN 9004-54-0  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9  
CMF H2 O4 S



L39 ANSWER 43 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:511468 HCAPLUS

DOCUMENT NUMBER: 113:111468

TITLE: Effect of polyanions and polycations on detyrosination of tubulin and microtubules at steady state

AUTHOR(S): Lopez, Ruben A.; Arce, Carlos A.; Barra, Hector S.

CORPORATE SOURCE: Fac. Cienc. Quim., Univ. Nac. Cordoba, Cordoba, 5016, Argent.

SOURCE: Biochimica et Biophysica Acta (1990), 1039(2), 209-17  
CODEN: BBACAQ; ISSN: 0006-3002

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Microtubule protein preps. purified from rat brain were used to study the effect of polycations and polyanions on the release of the COOH-terminal tyrosine of the  $\alpha$ -chain of tubulin catalyzed by tubulin carboxypeptidase. Most of the polycations and polyanions tested, independently on the ionogenic group, inhibited the reaction in a concentration-dependent fashion. Under steady-state conditions, detyrosination of the microtubule pool was inhibited to the same degree as occurred with the nonassembled tubulin pool, except in the case of chondroitin sulfate. This compound inhibited detyrosination of the nonassembled tubulin pool, but not that of microtubules. Heparin, the most potent inhibitor tested, produced the dissociation of the carboxypeptidase from microtubules. Many, but not all, of the other microtubule-associated polypeptides were also dissociated by heparin. Polylysine counteracted the inhibitory and dissociating effects of heparin. Heparin protected tubulin carboxypeptidase against inactivation. These results and previous reports describing, in nervous tissue, the presence of proteoglycans, RNA and basic proteins that inhibit detyrosination, suggest that tubulin carboxypeptidase might be physiol. modulated by elec. charged macromols.

CC 7-3 (Enzymes)

IT **Polyelectrolytes**

(cationic, tubulin carboxypeptidase of brain reaction with microtubules response to)

IT 9005-49-6, Heparin, biological studies. 24937-83-5, Polyadenylic acid 24967-93-9, Chondroitin sulfate a 24991-23-9  
25104-18-1, Polylysine 25513-46-6, Polyglutamic acid 38000-06-5, Polylysine

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(tubulin carboxypeptidase of brain response to)

IT 9005-49-6, Heparin, biological studies 24967-93-9, Chondroitin sulfate a

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(tubulin carboxypeptidase of brain response to)

RN 9005-49-6 HCAPLUS

CN Heparin (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 24967-93-9 HCAPLUS  
 CN Chondroitin, 4-(hydrogen sulfate) (9CI) (CA INDEX NAME)

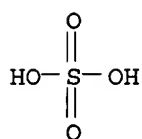
CM 1

CRN 9007-27-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9  
 CMF H2 O4 S



L39 ANSWER 44 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1990:25382 HCAPLUS  
 DOCUMENT NUMBER: 112:25382  
 TITLE: Shampoo compositions containing poly(oxyethylene)  
 alkyl ether sulfates and cationic  
 macromolecular compounds  
 INVENTOR(S): Kobayashi, Hide  
 PATENT ASSIGNEE(S): Lion Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01153618	A2	19890615	JP 1987-312643	19871210

PRIORITY APPLN. INFO.: JP 1987-312643 19871210

AB Shampoo compns. contain R1R2CHO(CH2CH2O)nSO3M (I) [R1, R2 = linear alkyl;  
 total number of C in R1 and R2 = 7-15; M = alkali metal, alkaline earth metal,  
 ammonium, organic amine; n (average) = 1-25] and cationic macromol.  
 compds. The compns. have good foaming and hair conditioning properties  
 and give no irritation to the skin and hairs. A shampoo composition was  
 prepared  
 from I [total number of C in alkyl group = 12-14, M = Na, n (average) = 3] 15,  
 quaternary N-containing cellulose ether (N content 2.0%, mol. weight 100,000)  
 1,  
 and H2O to 100 weight%.

IC ICM A61K007-075  
 ICS C11D001-29; C11D003-37  
 CC 62-3 (Essential Oils and Cosmetics)  
 ST shampoo polyoxyethylene sulfate cationic macromol  
 IT Shampoos

(containing poly(oxyethylene) alkyl ether sulfates and cationic macromol. compds.)

IT **Polyelectrolytes**  
(cationic, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)

IT 9004-34-6, Cellulose, biological studies  
RL: BIOL (Biological study)  
(ethers, quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)

IT 9005-25-8, Starch, biological studies  
RL: BIOL (Biological study)  
(quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)

IT 25322-68-3D, branched alkyl ethers, sodium sulfates  
RL: BIOL (Biological study)  
(shampoo compns. containing cationic macromol. compds. and)

IT 9004-34-6, Cellulose, biological studies  
RL: BIOL (Biological study)  
(ethers, quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)

RN 9004-34-6 HCAPLUS  
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9005-25-8, Starch, biological studies  
RL: BIOL (Biological study)  
(quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)

RN 9005-25-8 HCAPLUS  
CN Starch (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 45 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:404834 HCAPLUS

DOCUMENT NUMBER: 111:4834

TITLE: Transglomerular cationic macromolecular flux is mediated by a convection-binding mechanism

AUTHOR(S): Whiteside, Catharine I.; Lumsden, Charles J.

CORPORATE SOURCE: Dep. Med., Univ. Toronto, Toronto, ON, M5S 1A8, Can.

SOURCE: American Journal of Physiology (1989), 256(5, Pt. 2), F882-F893

CODEN: AJPHAP; ISSN: 0002-9513

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Glomerular polyanion function was explored using charged and neutral [3H]dextrans in the multiple indicator-dilution experiment. Anesthetized dogs received an intrarenal bolus of 125I-labeled albumin (plasma reference), [14C]inulin (glomerular reference), and [3H]dextran (test solute), followed by rapid serial sampling of the renal venous and urine outflows. Reduced urinary recovery of cationic diethylaminoethyl (DEAE) [3H]dextrans [19.0-31.5 Å Stokes-Einstein radius (SER)], compared with neutral [3H]dextran indicated intrarenal binding reversed by excess unlabeled cationic dextran. Tubular microperfusion with cationic [3H]dextran confirmed a pretubular binding site (presumed glomerular). The application of a computer-assisted math. model of convective flux plus reversible binding revealed that binding affinity increased with mol.

size. In vitro high-affinity binding of the same cationic [3H]dextrans to isolated rat glomeruli also increased with mol. size and was inhibited by protamine sulfate. Intrarenal polycation perfusion with protamine sulfate (1.0-3.8 mg/g kidney) or lysozyme (1.1-2.2 mg/g body weight) resulted in intraglomerular binding of anionic [3H]dextran without increased proteinuria or altered glomerular permselectivity to neutral [3H]dextrans  $\leq 33.0$  Å SER. Hence, transglomerular cationic solute flux is mediated by a convection-binding mechanism that creates an effective polyvalent barrier.

CC 13-2 (Mammalian Biochemistry)  
 ST cationic **macromol** flux kidney glomerulus  
 IT Cations  
     (**macromol.**, transglomerular flux of, convection-binding  
     mechanism mediation of)  
 IT Biological transport  
     (of cationic **macromols.** across kidney glomerulus,  
     convection-binding mechanism mediation of)  
 IT **Polyelectrolytes**  
     (anionic, **cationic** solute flux mediation by, at kidney  
     glomerulus)  
 IT Kidney, metabolism  
     (glomerulus, cationic **macromol.** flux at, convection-binding  
     mechanism mediation of)  
 IT 9015-73-0  
     RL: BIOL (Biological study)  
     (transglomerular flux of, convection-binding mechanism mediation of)  
 IT 9015-73-0  
     RL: BIOL (Biological study)  
     (transglomerular flux of, convection-binding mechanism mediation of)  
 RN 9015-73-0 HCAPLUS  
 CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
 CMF C6 H15 N O

Et<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-OH

L39 ANSWER 46 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1988:584627 HCAPLUS  
 DOCUMENT NUMBER: 109:184627  
 TITLE: Disease resistance response genes in plants:  
         expression and proposed mechanisms of induction  
 AUTHOR(S): Kendra, David F.; Fristensky, Brian; Daniels,  
             Catherine H.; Hadwiger, Lee A.  
 CORPORATE SOURCE: Dep. Plant Pathol., Washington State Univ., Pullman,  
                     WA, 99164-6430, USA

SOURCE: UCLA Symposia on Molecular and Cellular Biology, New Series (1987), 48(Mol. Strategies Crop Prot.), 13-24  
CODEN: USMBD6; ISSN: 0735-9543

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Several cloned pea genes are activated in temporal correlation with the expression of disease resistance observed cytol. in pea pod tissue inoculated with *Fusarium solani* f. sp. *phaseoli* (non-host resistance) or with races of *Pseudomonas syringae* pv. *pisi* (race-specific resistance). Chitosan, a minor component of the fungal cell wall is capable of inducing such genes. Some of the same genes were induced in both the non-host and race-specific resistance, suggesting that the single dominant Mendelian traits reportedly involved in race-specific resistance may be involved in the regulation of multiple response genes which are closely associated with the expression of resistance. Proposed mechanisms by which pathogens induce these genes are discussed in reference to (1) the in vitro effects of chitosan both on CD spectra of DNA and on restriction enzyme digests of plasmid DNA; and (2) chitosan as a mutagen in the Ames test.

CC 3-3 (Biochemical Genetics)  
Section cross-reference(s): 11

IT **Plasmid and Episome**  
(pUC12, supercoiled DNA of, chitosan effects on restriction endonuclease digestion of, plant disease resistance response gene induction in relation to)

IT 71-44-3, Spermine  
RL: PRP (Properties)  
(CD spectra of DNA affected by, chitosan induction of plant disease resistance response genes in relation to)

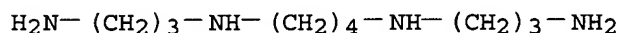
IT 25512-84-9, Poly dG·poly dC.  
RL: PRP (Properties)  
(CD spectra of, polycationic elicitors effect on, chitosan induction of plant disease resistance response genes in relation to)

IT 9012-76-4, Chitosan  
RL: PRP (Properties)  
(DNA interaction with, disease resistance response genes induction by, in pea)

IT 71-44-3, Spermine  
RL: PRP (Properties)  
(CD spectra of DNA affected by, chitosan induction of plant disease resistance response genes in relation to)

RN 71-44-3 HCAPLUS

CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



IT 9012-76-4, Chitosan  
RL: PRP (Properties)  
(DNA interaction with, disease resistance response genes induction by, in pea)

RN 9012-76-4 HCAPLUS

CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 47 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:79186 HCAPLUS

DOCUMENT NUMBER: 108:79186

TITLE: Metal ion extraction by an ultrafiltration process  
with modified starch derivatives

AUTHOR(S): Chaufer, Bernard; Quiminga, Siguigna A.; Deratani,  
Andre; Seville, Bernard

CORPORATE SOURCE: Univ. Paris-Val de Marne, Creteil, 94010, Fr.

SOURCE: Immobilisation Ions Bio-sorption (1986), 149-57.  
Editor(s): Eccles, Harry; Hunt, Stephen. Horwood:  
Chichester, UK.  
CODEN: 56EQA5

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The recovery of Cu and Ni from aqueous solns. was 98-99% by using  
ultrafiltration in the presence of aminated starch derivs. as chelating  
agents. The retention coefficient of metal ions was determined by the  
distribution  
of membrane pore size, which brings macromol. ligands to pass through the  
membrane. The ultrafiltration efficiency was determined by the free and bound  
metal ion ratio and chelating agent-metal complex stability.

CC 54-2 (Extractive Metallurgy)

IT 106-89-8D, reaction products with starch and **oligoamines**  
107-15-3D, reaction products with epichlorohydrin and starch 111-42-2D,  
reaction products with epichlorohydrin and starch 112-57-2D, reaction  
products with epichlorohydrin and starch 9005-25-8D, Starch,  
r.p. with epichlorohydrin and **oligoamines**, uses and  
miscellaneous  
RL: PROC (Process)  
(for copper and nickel recovery by ultrafiltration)

IT 9004-35-7 83382-19-8 89234-36-6 112955-61-0  
RL: PROC (Process)  
(for ultrafiltration of copper and nickel with aminated starch  
chelating agents)

IT 9005-25-8D, Starch, r.p. with epichlorohydrin and  
**oligoamines**, uses and miscellaneous  
RL: USES (Uses)  
(for copper and nickel recovery by ultrafiltration)

RN 9005-25-8 HCAPLUS

CN Starch (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9004-35-7  
RL: PROC (Process)  
(for ultrafiltration of copper and nickel with aminated starch  
chelating agents)

RN 9004-35-7 HCAPLUS

CN Cellulose, acetate (9CI) (CA INDEX NAME)

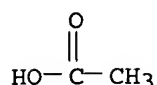
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 64-19-7  
CMF C2 H4 O2



L39 ANSWER 48 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:441096 HCAPLUS  
 DOCUMENT NUMBER: 107:41096  
 TITLE: Stabilizers for polymers  
 INVENTOR(S): Minagawa, Motonobu; Nakahara, Yutaka; Shibata, Toshiihiro; Hida, Etsuo  
 PATENT ASSIGNEE(S): Adeka Argus Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62050342	A2	19870305	JP 1985-191279	19850830
JP 05018355	B4	19930311		
EP 217149	A2	19870408	EP 1986-111999	19860829
EP 217149	A3	19880608		
EP 217149	B1	19910130		
R: BE, CH, DE, FR, GB, LI, NL				
US 4885323	A	19891205	US 1987-138750	19871228
PRIORITY APPLN. INFO.:			JP 1985-191279	19850830
			US 1986-902380	19860902

AB The hindered amines I (R = H, alkyl, alkenyloxyl, acyl; R1, R2 = H, alkyl, oxyalkylene; n = 2-40) are light stabilizers (0.001-5 phr) for polymers. Thus, polypropylene containing 0.2 phr stearyl- (di-tert-butyl-4-hydroxyphenyl)propionate and 0.3 phr I (R = H; R1, R2 = Bu; n = 10) gave an 0.3-mm sheet with UV resistance 880 and 820 h after 0 and 24 h, resp., in H2O at 80°.

IC ICM C08K005-34  
 ICS C08L101-00

ICA C08G073-08

CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 42

IT Light stabilizers  
 (hindered **oligoamines**, for polymers)

IT Coating materials  
 Urethane polymers, uses and miscellaneous  
 RL: USES (Uses)  
 (light stabilizers for, hindered **oligoamines** as)

IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-08-1 9003-56-9, ABS 9004-36-8, Cellulose acetate butyrate 9010-79-1, Ethylene-propylene copolymer  
 RL: USES (Uses)  
 (light stabilizers for, hindered **oligoamines** as)

IT 9004-36-8, Cellulose acetate butyrate  
 RL: USES (Uses)  
 (light stabilizers for, hindered **oligoamines** as)

RN 9004-36-8 HCAPLUS

CN Cellulose, acetate butanoate (9CI) (CA INDEX NAME)



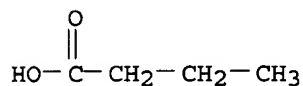
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

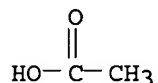
CM 2

CRN 107-92-6  
CMF C4 H8 O2



CM 3

CRN 64-19-7  
CMF C2 H4 O2



L39 ANSWER 49 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:494142 HCAPLUS

DOCUMENT NUMBER: 105:94142

TITLE: Polymer-coated particles having immobilized metal ions  
on their surfaces

INVENTOR(S): Porath, Jerker; Lindahl, Mats

PATENT ASSIGNEE(S): Exploaterings AB T.B.F., Swed.

SOURCE: Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 179039	A2	19860423	EP 1985-850315	19851008
EP 179039	A3	19861230		
EP 179039	B1	19910703		
R: DE, FR, GB				
SE 8405241	A	19860420	SE 1984-5241	19841019
SE 454885	B	19880606		
SE 454885	C	19880915		
US 4677027	A	19870630	US 1985-786857	19851011
JP 61118398	A2	19860605	JP 1985-234380	19851019
JP 02025920	B4	19900606		

PRIORITY APPLN. INFO.: SE 1984-5241 19841019

AB A product for the separation of biol. mols. constitutes a solid phase (e.g. magnetite) in which immobilized metal ions on the surface are substituted with a hydrophilic polymer, a polymer derivative, or a polymer aggregate through a metal chelate bond or metal sulfide bond by chemisorption. For example, magnetic particles were shaken with iminodiacetate (IDA) dextran and the resulting IDA-dextran-bound metal particles were activated with divinyl sulfone (DVS), slurried with a buffer solution containing dextran T 500 and again activated with DVS. A portion of the activated particles was coupled with colominic acid and these particles were used for the elution of K99 pilae from Escherichia coli. A 20-fold increased elution was observed compared with colomine-substituted Sephadix G 10.

IC ICM B01J020-32  
ICS B01D015-08

CC 9-10 (Biochemical Methods)

IT **Peptides, uses and miscellaneous**  
Polyamides, uses and miscellaneous  
Polyesters, uses and miscellaneous  
Polyethers  
Polysaccharides, uses and miscellaneous  
**Proteins**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chemisorption of, on particles with immobilized metal ions for biol. **macromol.** separation)

IT Chelating agents  
(chemisorption of, to particles with immobilized metal ions for biol. **macromol.** separation)

IT Chemisorption  
(of polymers, on particles with immobilized metal ions for biol. **macromol.** separation)

IT Magnetic substances  
(particles, with immobilized metal ions, polymers chemisorption to, for biol. **macromol.** separation)

IT Metals, uses and miscellaneous  
RL: USES (Uses)  
(polymer-coated particles with immobilized, for biol. **macromol.** separation)

IT Amines, uses and miscellaneous  
Nucleotides, uses and miscellaneous  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(poly-, chemisorption of, on particles with immobilized metal ions for biol. **macromol.** separation)

IT Alcohols, uses and miscellaneous  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polyhydric, chemisorption of, on particles with immobilized metal ions for biol. **macromol.** separation)

IT 79-06-1D, polymers 79-08-3D, reaction products with tetraethylenepentamine 112-57-2D, reaction products with bromoacetic acid 9004-54-0, reactions 9004-54-0D, iminodiacetic acid derivs. 9012-36-6 9037-55-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chemisorption of, on particles with immobilized metal ions for biol. **macromol.** separation)

IT 142-73-4D, dextran derivs.  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chemisorption of, on particles with immobilized metal ions, for biol. **macromol.** separation)

IT 1309-38-2, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)

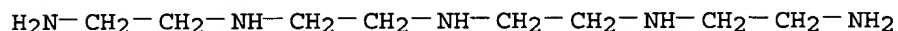
(particles, with immobilized metal ions, polymers chemisorption to, for  
biol. **macromol.** separation)

IT 77-77-0 25322-68-3  
RL: ANST (Analytical study)  
(polymer-coated particles with immobilized metal ions activation with,  
for biol. **macromol.** separation)

IT 9013-15-4  
RL: ANST (Analytical study)  
(polymer-coated particles with immobilized metal ions coupled to, for  
biol. **macromol.** separation)

IT 112-57-2D, reaction products with bromoacetic acid  
9004-54-0, reactions 9004-54-0D, iminodiacetic acid  
derivs.  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chemisorption of, on particles with immobilized metal ions for biol.  
**macromol.** separation)

RN 112-57-2 HCAPLUS  
CN 1,2-Ethanediamine, N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-  
(9CI) (CA INDEX NAME)



RN 9004-54-0 HCAPLUS  
CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9004-54-0 HCAPLUS  
CN Dextran (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 50 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:155297 HCAPLUS

DOCUMENT NUMBER: 102:155297

TITLE: A study of polycation-anionic-surfactant systems

AUTHOR(S): Leung, P. S.; Goddard, E. D.; Han, C.; Glinka, C. J.

CORPORATE SOURCE: Spec. Chem. Div., Union Carbide Corp., Tarrytown, NY,  
10591, USA

SOURCE: Colloids and Surfaces (1985), 13(1), 47-62

CODEN: COSUD3; ISSN: 0166-6622

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The interaction of SDS with 2 cationic polyelectrolytes, Polymer JR, a cationic cellulose ether, and Reten, a synthetic vinyl copolymer, was studied. The study emphasizes small angle neutron scattering but also includes viscosity and dye-solubilization, measurements. Small addns. of SDS to 1% Polymer JR solns. lead to intermol. interactions between the polymer chains via the bound surfactant, whereas in the more flexible and globular vinyl polyelectrolyte, intramol. interaction is favored. Just into the resolubilization zone, where excess anionic surfactant is present (.apprx.1.5% SDS), Polymer JR favors a polymer micellar association, whereas the more flexible Reten polymer seems to stabilize a structure involving association of surfactant into smaller units, perhaps surfactant pairs. In both cases the characteristic interaction peak of SDS micelles is absent in the scattering profile. When the surfactant is in large excess (5%) this peak returns, i.e., micellar structures predominate in both systems, probably with the **macromol.** woven into the micellar domains,

resembling an entangled string of beads.  
 CC 66-2 (Surface Chemistry and Colloids)  
 IT **Polyelectrolytes**  
     (cationic, solubilization of, in surfactant micelles)  
 IT 35429-19-7 81859-24-7  
     RL: PRP (Properties)  
     (interaction of, with SDS, micelle structure in relation to)  
 IT 81859-24-7  
     RL: PRP (Properties)  
     (interaction of, with SDS, micelle structure in relation to)  
 RN 81859-24-7 HCAPLUS  
 CN Cellulose, 2-hydroxyethyl 2-[2-hydroxy-3-(trimethylammonio)propoxy]ethyl  
     2-hydroxy-3-(trimethylammonio)propyl ether, chloride (9CI) (CA INDEX  
     NAME)

CM 1

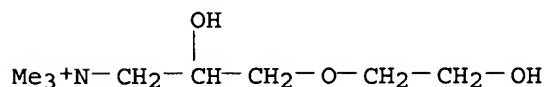
CRN 170553-71-6

CMF C8 H20 N O3 . x C6 H16 N O2 . x C2 H6 O2 . x Unspecified

CM 2

CRN 170344-46-4

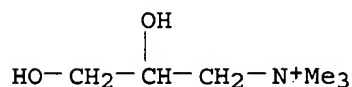
CMF C8 H20 N O3



CM 3

CRN 44814-66-6

CMF C6 H16 N O2



CM 4

CRN 9004-34-6

CMF Unspecified

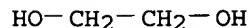
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 5

CRN 107-21-1

CMF C2 H6 O2



L39 ANSWER 51 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:109393 HCAPLUS

DOCUMENT NUMBER: 102:109393

TITLE: Transfer of **macromolecules** from a chromatographic substrate to an immobilization matrix

INVENTOR(S): Gershoni, Jonathan M.

PATENT ASSIGNEE(S): Yale University, USA

SOURCE: Fr. Demande, 58 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2540629	A1	19840810	FR 1984-1805	19840207
FR 2540629	B1	19890922		
US 4512896	A	19850423	US 1983-464609	19830207
CA 1207737	A1	19860715	CA 1983-428218	19830516
WO 8403055	A1	19840816	WO 1984-US139	19840127
W: AU, DK, JP				
RW: BE, CH, DE, GB, NL, SE				
AU 8424978	A1	19840830	AU 1984-24978	19840127
AU 577276	B2	19880922		
EP 138841	A1	19850502	EP 1984-900827	19840127
EP 138841	B1	19931020		
R: BE, CH, DE, GB, LI, NL, SE				
JP 60501126	T2	19850718	JP 1984-500904	19840127
JP 03076868	B4	19911206		
EP 343387	A1	19891129	EP 1989-107443	19840127
EP 343387	B1	19940601		
R: BE, CH, DE, GB, LI, NL, SE				
IL 70866	A1	19870916	IL 1984-70866	19840203
US 4601828	A	19860722	US 1985-688861	19850104
PRIORITY APPLN. INFO.:			US 1983-464609	19830207
			EP 1984-900827	19840127
			WO 1984-US139	19840127

AB A method is described for the transfer by electroelution of **macromols.** (e.g., proteins, nucleic acids) from a chromatog. substrate (e.g., polyacrylamide gel) to an immobilization matrix such as a modified-charge organic hydrophilic microporous membrane (e.g., cellulose ester or polyamide membrane) with a water-soluble cationic agent bound on its surface or a porous sheet impregnated with a polymeric microporous membrane. Following electrophoretic transfer of proteins, the membrane is inactivated by incubation with bovine serum albumin or Hb and is then incubated with ligands (e.g., lectins, antibodies). Thus, a modified-charge Nylon 66 membrane was prepared by immersing a Nylon 66 membrane in Hercules 1884 (4%) or Hercules R 4308 (2%) resin, followed by washing and drying at 110° for 3 min. Examples are also given of the use of the membranes for the electrophoretic transfer of erythrocyte proteins and acetylcholine receptors.

IC G01N027-26; G01N031-08; G01N033-48

CC 9-7 (Biochemical Methods)

ST **macromol** chromatog substrate transfer electroelution; membrane**macromol** electroelution transfer; electrophoresis gel**macromol** transfer membrane

IT Polyester fibers

- RL: ANST (Analytical study)  
(modified-charge membrane containing, biol. **macromol.** transfer from electrophoresis gel in relation to)
- IT Polyamide fibers, uses and miscellaneous  
RL: USES (Uses)  
(modified-charge membrane of, biol. **macromol.** transfer from electrophoresis gels in relation to)
- IT Membrane, biological  
(modified-charge, **macromol.** transfer of, after electrophoresis)
- IT Deoxyribonucleic acids  
**Macromolecular** compounds  
Nucleic acids  
**Proteins**  
RL: PRP (Properties)  
(transfer of, from electrophoresis gel onto modified-charge membrane, by electroelution)
- IT Electrophoresis and Ionophoresis  
(gel, of biol. **macromols.**, transfer after, onto modified-charge membrane)
- IT 64-18-6, uses and miscellaneous 67-56-1, uses and miscellaneous  
RL: ANST (Analytical study)  
(in modified-charge membrane preparation, for biol. **macromol.** transfer from electrophoresis gel)
- IT 112-57-2 2425-79-8 73071-59-7 82600-37-1 82601-34-1  
82601-43-2 129807-53-0  
RL: ANST (Analytical study)  
(microporous membrane charge modification by, biol. **macromol.** transfer from electrophoresis gel in relation to)
- IT 9004-34-6D, esters  
RL: ANST (Analytical study)  
(modified-charge membrane of, biol. **macromol.** transfer from chromatog. substrate to)
- IT 32131-17-2P, reactions  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(reaction of, with Hercules resin, for modified-charge membrane preparation, biol. **macromol.** transfer from chromatog. substrate in relation to)
- IT 112-57-2  
RL: ANST (Analytical study)  
(microporous membrane charge modification by, biol. **macromol.** transfer from electrophoresis gel in relation to)
- RN 112-57-2 HCAPLUS  
CN 1,2-Ethanediamine, N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-(9CI) (CA INDEX NAME)



- IT 9004-34-6D, esters  
RL: ANST (Analytical study)  
(modified-charge membrane of, biol. **macromol.** transfer from chromatog. substrate to)
- RN 9004-34-6 HCAPLUS  
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L39 ANSWER 52 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:32371 HCAPLUS

DOCUMENT NUMBER: 100:32371

TITLE: Release of calcium from suspension-cultured Glycine max cells by chitosan, other **polycations**, and polyamines in relation to effects on membrane permeability

AUTHOR(S): Young, David H.; Kauss, Heinrich

CORPORATE SOURCE: Fachbereich Biol., Univ. Kaiserslautern, Kaiserslautern, D-6750, Fed. Rep. Ger.

SOURCE: Plant Physiology (1983), 73(3), 698-702

CODEN: PLPHAY; ISSN: 0032-0889

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Treatment with chitosan of suspension-cultured G. max cells labeled with  $^{45}\text{Ca}^{2+}$  caused a rapid release of Ca, which was complete much earlier than the chitosan-induced leakage of intracellular electrolytes and probably reflects Ca loss primarily from the cell wall and (or) plasma membrane. A linear correlation was found between Ca release from chitosan-treated whole cells or isolated cell walls and the amount of chitosan bound. Other **polycations** (poly-L-lysine, histone, DEAE-dextran, and protamine sulfate), low-mol.-weight polyamines (spermine, spermidine, and putrescine), and polyanions (polygalacturonate and poly-L-aspartate, which act as chelating agents) also released Ca from whole cells and isolated cell walls; however, only the **polycations** increased membrane permeability. Poly-L-lysines of differing mol. weight showed a similar ability to release Ca, but their effect on membrane permeability increased with increasing mol. weight. The results suggest that the effect of **polycations** on permeability is not the direct result of Ca displacement from the cell surface but is probably due to cross-linking of surface components. The order of effectiveness of inorg. cations in displacing Ca from whole cells and isolated cell walls was  $\text{Ca}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$  >  $\text{Mg}^{2+}$  >  $\text{K}^{+}$ ,  $\text{Na}^{+}$ .

CC 11-8 (Plant Biochemistry)

ST soybean cell calcium release chitosan; **polycation** calcium release soybean cell; polyamine calcium release soybean cell

IT Soybean

(calcium release from cells of, by chitosan and polyamines and **polycations**, membrane permeability in relation to)

IT Cell membrane

Cell wall

(permeability of, in soybean, calcium release by chitosan and polyamines and **polycations** in relation to)

IT 56-87-1, biological studies 67-66-3, biological studies 71-44-3  
 110-60-1 124-20-9 3416-24-8 9002-93-1 9008-22-4 9012-76-4  
 9015-73-0 9046-38-2 25104-18-1 25608-40-6  
 38000-06-5

RL: BIOL (Biological study)

(calcium release by, from soybean cells, membrane permeability in relation to)

IT 71-44-3 9012-76-4 9015-73-0 25104-18-1

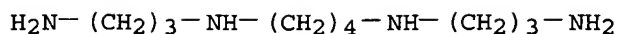
25608-40-6 38000-06-5

RL: BIOL (Biological study)

(calcium release by, from soybean cells, membrane permeability in relation to)

RN 71-44-3 HCAPLUS

CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 9012-76-4 HCAPLUS  
 CN Chitosan (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9015-73-0 HCAPLUS  
 CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

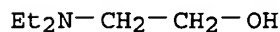
CM 1

CRN 9004-54-0  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
 CMF C6 H15 N O

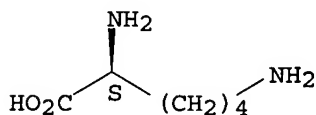


RN 25104-18-1 HCAPLUS  
 CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1  
 CMF C6 H14 N2 O2

Absolute stereochemistry.

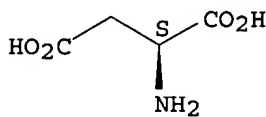


RN 25608-40-6 HCAPLUS  
 CN L-Aspartic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

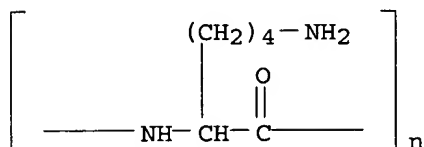
CRN 56-84-8  
 CMF C4 H7 N O4

Absolute stereochemistry. Rotation (+).





RN 38000-06-5 HCAPLUS  
 CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



L39 ANSWER 53 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:161210 HCAPLUS

DOCUMENT NUMBER: 98:161210

TITLE: Vinyl polymerization. 415. Effect of polyethylene glycol on polymerization of methyl methacrylate initiated by sodium salt-type **macromolecular** electrolytes

AUTHOR(S): Ouchi, Tatsuro; Nishinakama, Kazuhiro; Beika, Nobuaki; Imoto, Minoru

CORPORATE SOURCE: Fac. Eng., Kansai Univ., Osaka, 564, Japan

SOURCE: Polymer Bulletin (Berlin, Germany) (1983), 9(8-9), 396-401

CODEN: POBUDR; ISSN: 0170-0839

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of polyethylene glycol (I) [25322-68-3] were studied in the radical polymerization of Me methacrylate [80-62-6] initiated with aqueous solns. of

**macromol.** electrolytes such as Na polyvinylphenolate [85437-37-2] and Na polycarboxylate, e.g., alternating di-Na maleate-styrene copolymer [37286-89-8]. I promoted polymns. initiated by the Na salt-type

**macromol.** electrolytes.

CC 35-3 (Chemistry of Synthetic High Polymers)

IT **Polyelectrolytes**

(**cationic**, aqueous, sodium salts, catalysts, for polymerization of Me methacrylate, polyoxyethylene effect on)

IT 9004-32-4 27379-05-1 35177-74-3 85437-37-2

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for polymerization of Me methacrylate, polyoxyethylene effect

on)

IT 9004-32-4

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for polymerization of Me methacrylate, polyoxyethylene effect

on)

RN 9004-32-4 HCAPLUS

CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

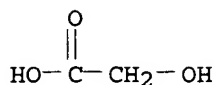
CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
CMF C2 H4 O3



L39 ANSWER 54 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1980:491491 HCAPLUS

DOCUMENT NUMBER: 93:91491

TITLE: Preparation of intact chloroplasts by chemically-induced lysis of the green alga *Dunaliella marina*

AUTHOR(S): Kombrink, Erich; Woeber, Guenter

CORPORATE SOURCE: Fachber. Chem., Philipps-Univ., Marburg, D-3550, Fed. Rep. Ger.

SOURCE: Planta (1980), 149(2), 123-9

CODEN: PLANAB; ISSN: 0032-0935

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method for the isolation in high yield of intact chloroplasts from the unicellular green alga *D. marina* (Volvocales) is described. This procedure uses chemical induced lysis of cells with the polycationic **macromols.**, DEAE-dextran (mol. weight 500,000) or poly-D,L-lysine (mol. weight 30,000-70,000). Reaction conditions were optimized with respect to obtaining a high yield of intact chloroplasts, after isopycnic centrifugation in a linear sucrose d. gradient, by varying the concentration of polycation and the temperature and pH of incubation. Broken chloroplasts devoid

of the stromal marker enzymes fructose bisphosphate phosphatase and ribulose bisphosphate carboxylase, but containing mitochondrial (fumarase) and microbody (catalase) contamination, were banded at a buoyant d. of 1.18 g/cm<sup>3</sup>. Intact chloroplasts, as indicated by their retention of alkaline fructose bisphosphate phosphatase and ribulose bisphosphate carboxylase, were found in 30% yield (chlorophyll in intact cells, 100%) at an equilibrium d. of 1.24 g/cm<sup>3</sup>. Contamination by cytoplasmic material (pyruvate kinase), mitochondria, and microbodies was <8% each.

CC 9-13 (Biochemical Methods)

ST chloroplast isolation *Dunaliella*; DEAE dextran chloroplast isolation; polylysine chloroplast isolation; lysine homopolymer chloroplast isolation; polycation **macromol** chloroplast isolation; polymer chloroplast isolation

IT Cations

(polyvalent **macromol.**, in chloroplast isolation from *Dunaliella marina*)

IT 9015-73-0 26714-32-9 26913-65-5

RL: ANST (Analytical study)

(in chloroplast isolation from *Dunaliella marina*)

IT 9015-73-0

RL: ANST (Analytical study)

(in chloroplast isolation from *Dunaliella marina*)

RN 9015-73-0 HCAPLUS

CN Dextran; 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 100-37-8  
CMF C6 H15 N O

Et<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-OH